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ABSTRACT

A year-long study of the communities encompassed by the New Caney Independent School District in Montgomery County, Texas, was conducted by the College of Education at the University of Houston. Educational facilities and program were surveyed. Planning data included--description of district, land usage, pupil residence, population density and trends, financial ability, and evaluations of existing plants and the transportation system. Data projected--future enrollment, plant utilization, and program. The educational specifications detail the educational requirements for the school plant as a whole and for each department of the secondary school specifically, in terms of: space needs, program to be accommodated, pupil load and activities, relationships to space, and special facilities. Administrators and faculty contributed to these specifications. General standards and departmental requirements are given to serve as the guideline for the architect. The final section of this report gives planning guidelines for the Board of Education. (RH)

ED036979

EDUCATIONAL SPECIFICATIONS NEW CANEY INDEPENDENT SCHOOL DISTRICT

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EDUCATIONAL SPECIFICATIONS
for
NEW CANEY INDEPENDENT SCHOOL DISTRICT
MONTGOMERY COUNTY, TEXAS

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J. Ed. King, High School Principal
J. C. Williamson, Elementary School Principal
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B. A. Gray, Business Manager

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Foreword

The College of Education, University of Houston, makes its professional staff available for services to the school districts of its service area through the Bureau of Education Research and Services. "Educational Specifications, New Caney Independent School District" is a publication resulting from a year-long study of the communities which comprise the New Caney Independent School District, along with the survey of educational facilities and program of the school district. The report and projections involved were the result of a cooperative study by the school board, administration, and faculty of the school district, and a team of consultants from University of Houston.

Ultimate completion of the plans called for in the Educational Specifications should bring a great deal of satisfaction to all concerned. The school facilities will be updated and designed for maximum flexibility in meeting the increasing student loads. The educational program will be modernized and strengthened. Educational services will be more uniformly provided over the district. Many educational problems will have been solved and a firm foundation will be provided for meeting future growth. The administration, the school board, the educational personnel, the parents, the children, and the community will benefit far into the future from such planning.

Richard D. Strahan, Director
Bureau of Education Research
and Services
University of Houston

November 1, 1963

PART I

PLANNING DATA

Preliminary to the preparation of educational specifications a series of studies was necessary. These studies were reported to the New Caney Board of Education first in the brochure School Needs preparatory to the bond election, and later in more detail in an Interim Report to the Board of Education, a copy of which is contained in the Appendix.

The purpose of Part I of this report is to summarize the data and descriptions produced in the preliminary studies, as valuable background information for the educational specifications. The data are presented under the following headings: (1) description of the district, (2) land usage, (3) pupil residence, (4) population density studies, (5) school population trends, (6) financial ability of the district, (7) evaluation of existing plant, and (8) school transportation.

DESCRIPTION OF THE DISTRICT

The New Caney Independent School District is a large school district containing approximately 90 square miles. It is situated astride the Eastex Freeway (U.S. Highway 59) which provides an immediate high-speed traffic artery into the heart of the Houston metropolitan complex. At present the school district is quite sparsely settled and offers a quiet, secluded area for potential residential development. Homesites are being developed in a number of areas with plot sizes varying from one-half acre to five acres. All-weather roads now cross the district from north to south and east to west. The piney woods and sandy loam soil make it highly desirable for future suburban development.

A study of the traffic map of Montgomery County, issued by the Texas Highway Department, indicates the potential inherent in the area for development. This map shows that 7,950 vehicles per day were entering the county from Highway 59, making this the most heavily travelled highway reported for the county up to July 31, 1962. More recent figures are not yet available.

The Urban Complex

Metropolitan Houston is one of the nation's most rapidly developing areas. Leading business specialists and economic forecasters have predicted that it is destined to become one of the world's leading centers of population, finance, and industry. Development of an urban area brings with it many problems which are not easily solved. These problems take the form of provision of goods and services, employment, housing, public improvement, health and medical facilities, and public education.

An Urban Complex develops in two distinct ways: (1) land utilization within the city itself tends to become more intensive, creating an ever-increasing density of population; and (2) the periphery of the city begins to move outward with suburban developments. Underdeveloped land serviced by high-speed traffic arteries and freeways suddently becomes desirable for homesites; and sub-division development begins with its attendant needs of new streets, utility connections, shopping centers, fire and police protection, and schools.

The Urban Complex and New Caney Independent School District

The influence of the Houston Metropolitan area did not reach the southeastern segment of Montgomery County until 1958. The New Caney area had actually suffered a population loss for the previous six years which was typical of most rural areas in the state. Beginning of subdivision homes in the New Caney Independent School District coincided with the opening of the Eastex Freeway to Houston. New Caney and Porter are now only thirty-five minutes from the heart of the city. Many families have discovered the desirable features of having a spacious homesite nestled in the pine trees and yet being only a few minutes from the cultural, educational, and business centers of the urban environment.

Further extension of the Eastex Freeway into Montgomery County will accelerate the rate of change already occurring. Property values will appreciate rapidly. The quality and character of housing will tend to improve. There will be increased demands; property will have to be assessed at more realistic levels when compared with appreciated value.

The New Caney Independent School District is large in area and as yet sparsely populated. Development of the Lake Houston recreation area, the building of the Jetero Airport, and further discovery of fine subdivision sites in this district will speed growth in the district. When the land area is finally highly utilized, the scholastic population will have increased many times. Short-range solutions will be expensive and will be unsuited to educational needs within a short time. Long-range planning and development of sound financing are essential elements for future development.

LANE USAGE

Current land usage is displayed in Figure 1, which shows a map developed by the survey team. Evaluation of the various land uses indicates that only a very small portion of the area is currently being used for purposes other than agricultural or timber production. Though frequently land use maps are refined for showing numerous types of land uses, only three have been applied in this study: (1) Commercial, (2) Residential, and (3) Agricultural or timber production.

The commercial areas are found to be located principally along major traffic arteries through the district. Most of this development lies along U. S. Highway 59 and FM 1314. It consists of service stations, retail stores, and restaurants. A few professional offices for real estate development and sales, chiropractor's practice, and others are located in the commercial area. Although good rail transportation facilities are available through the Texas and New Orleans Railroad which parallels the highway through the district, there are no industrial or manufacturing operations in the area at present. Such industrial development would aid in the development of the tax base for the district and should be actively recruited.

The residential areas also tend to follow the available traffic arteries in the district. Although housing units are scattered throughout the district, major residential construction is concentrated in developments in the central portion of the district following the principal means of access roads. Even the shaded areas on the land usage map (Figure 1) represent extremely low densities when compared to urban usage because the basic home site of New Caney district is seldom less than one-half an acre and frequently it is as large as five acres or more.

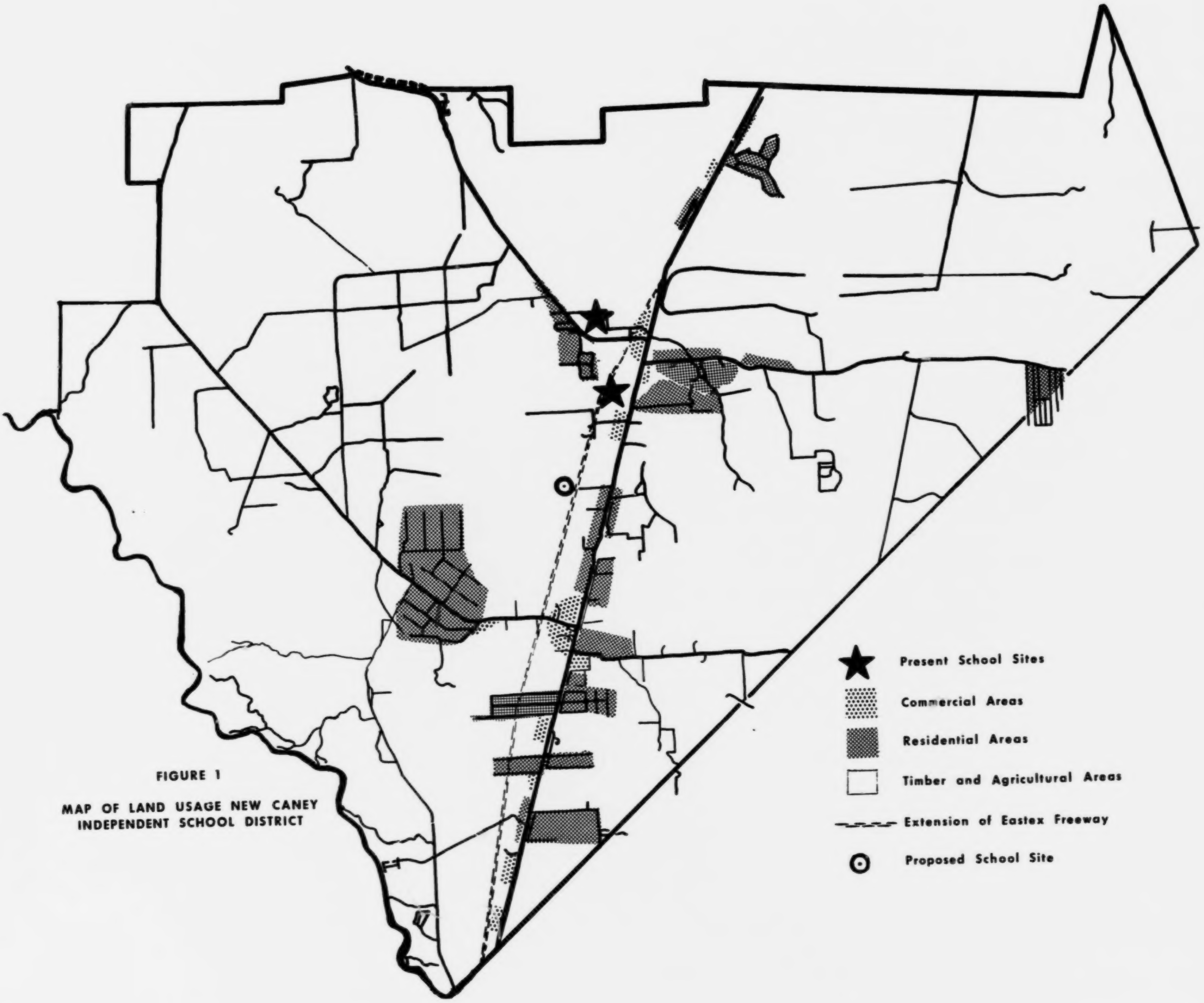

★ Present School Sites
▨ Commercial Areas
■ Residential Areas
☐ Timber and Agricultural Areas
Extension of Eastex Freeway
⊙ Proposed School Site

FIGURE 1

MAP OF LAND USAGE NEW CANEY INDEPENDENT SCHOOL DISTRICT

Though large proportions of the remaining land area in the district are suitable for residential development, the land is currently used only for agricultural or timber purposes. A study of the county soon to be released by the United States Soil Conservation Service recommends that several sizable segments be limited to agricultural or timber growth purposes because of soil and drainage conditions. Outside of these areas there are many square miles of beautiful timberland which will be suitable for residential development purposes as soon as access roads are available.

PUPIL RESIDENCE

In Figure 2 the pupil residences have been indicated on the basic school district map, utilizing dots for white pupil residences and squares for negro pupil residences as reported for the 1962-63 school year. The residences of reported pupils are scattered throughout the district but at least two natural groupings appear. A school service area appears to be developing in the vicinity of the intersection of FM 1413 and Highway 59 in the southern half of the district, with a second school service area developing along FM 1485 and Highway 59.

Good educational planning dictates that educational services should be reasonably near the residence of the pupil to be served. For the future, it would seem adequate to provide two elementary service areas with a single service area for junior and senior high school pupils. Proposed service areas are shown on Figure 8 of Part IV. Such planning would necessitate acquisition of an elementary school site and construction of an elementary school in a section including the southern service area.

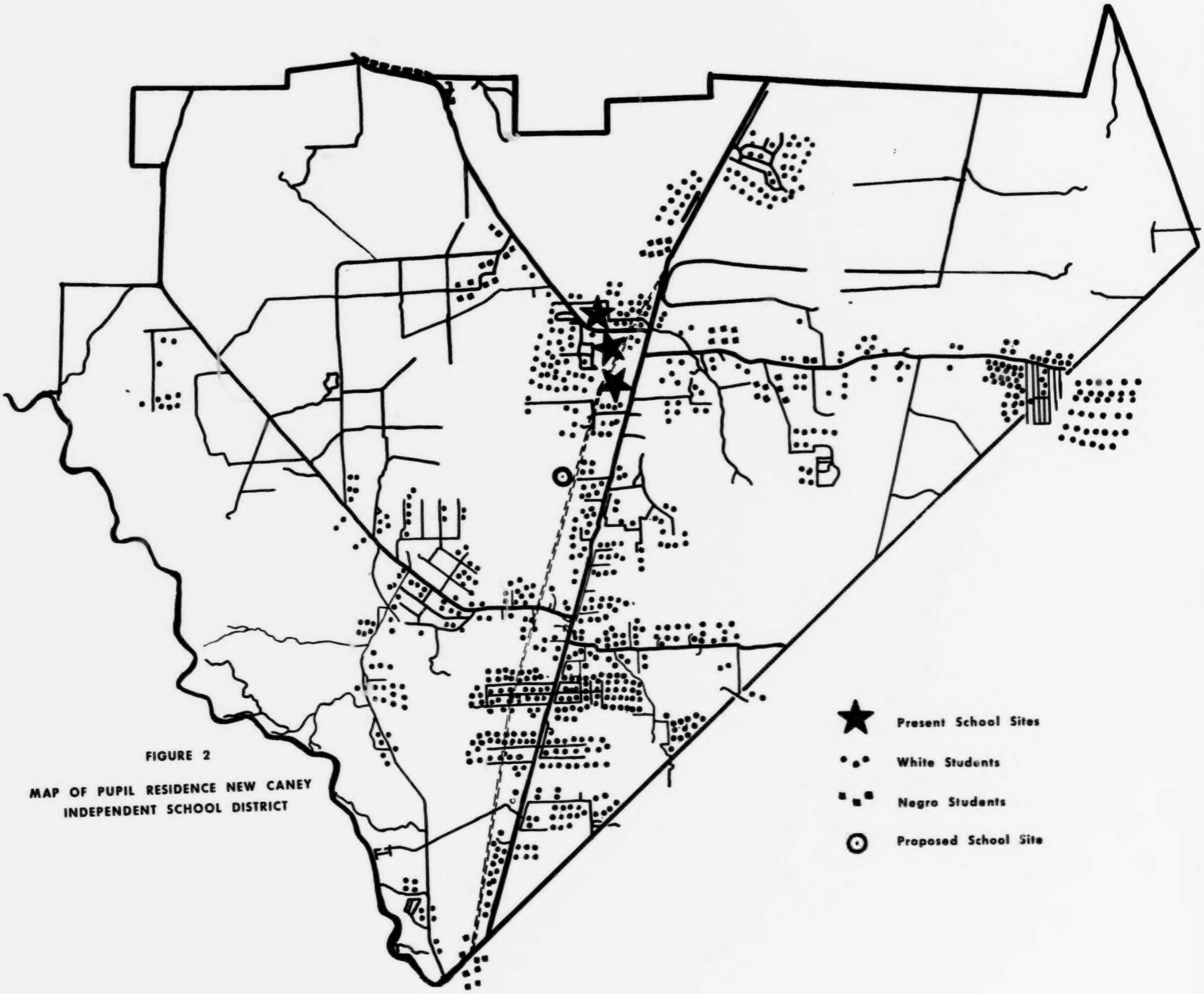

★ Present School Sites
• • • White Students
■ ■ ■ Negro Students
⊙ Proposed School Site

FIGURE 2

MAP OF PUPIL RESIDENCE NEW CANEY INDEPENDENT SCHOOL DISTRICT

POPULATION DENSITY STUDIES

The clearest method of predicting the probable school population increase in the New Caney Independent School District is to analyze the rate of growth in adjoining areas of Harris and Montgomery Counties. The school population density map shown in Figure 3 gives the comparative density of pupils per square mile for 1962-63 in school districts of Harris and Montgomery Counties. The major growth in recent years has tended to follow the industrial development of the Houston Ship Channel.

Montgomery County as yet would be classed primarily as a rural area because it has a density of less than 15 pupils per square mile throughout the county. It is within reasonable expectation that growth of the Metropolitan Area will create a continuous urbanization of land usage over several counties contiguous to the Metropolitan Area.

Patterns of Density Dispersement

Studies of density of school population demonstrate that maximum land usage occurs in the heart of a metropolitan area. Overflow of population tends to follow principal traffic arteries and availability of land for suburban development.

Examination of the more densely populated districts shown indicates that the rate of growth frequently accelerates. Houston, with its more highly saturated land usage and multistory development, has a school population density of 611 pupils per square mile. Aldine and Northeast Houston share a comparatively high density of school population. Conroe, New Caney, and Humble are on the fringe of urban development; but they have experienced a high percentage of school population growth with the gaining of new highways to the city's center. It appears that these school districts will double their school enrollments several times in the next few years.

SCHOLASTIC DENSITIES OF SELECTED SCHOOL DISTRICTS
IN HARRIS AND MONTGOMERY COUNTIES

School District	Number Square Miles	Density: Average Daily Attendance Per Square Mile by Years					
		57-58	58-59	59-60	60-61	61-62	62-63
Houston	311	399.65	430.42	453.35	478.71	501.25	611.00
Northeast Houston	31	221.77	240.76	261.00	278.17	303.68	347.58
Aldine	112	70.86	71.85	74.06	80.45	86.21	104.13
Humble	89	8.43	8.53	9.29	10.35	10.95	12.11
New Caney	90	3.88	4.43	5.11	5.96	7.08	8.56
Splendora	78	4.32	4.91	5.22	5.51	5.74	6.83
Conroe	300	8.76	10.06	10.26	10.68	11.01	12.29

New Residential Construction

The survey team has found that another useful way to look at the growth of the New Caney-Porter area would be actually to survey the streets and subdivisions in an attempt to locate the residential housing which had been constructed within the past ten years. A research associate of the Bureau of Education Research and Services examined the tax rolls of the school district and then drove through each subdivision and slash-road in an attempt to locate these properties accurately on a map.

Figure 4 is a new residential building map giving the approximate location of new residential construction in the school district. Though the character of the dwellings varies widely, much substantial building

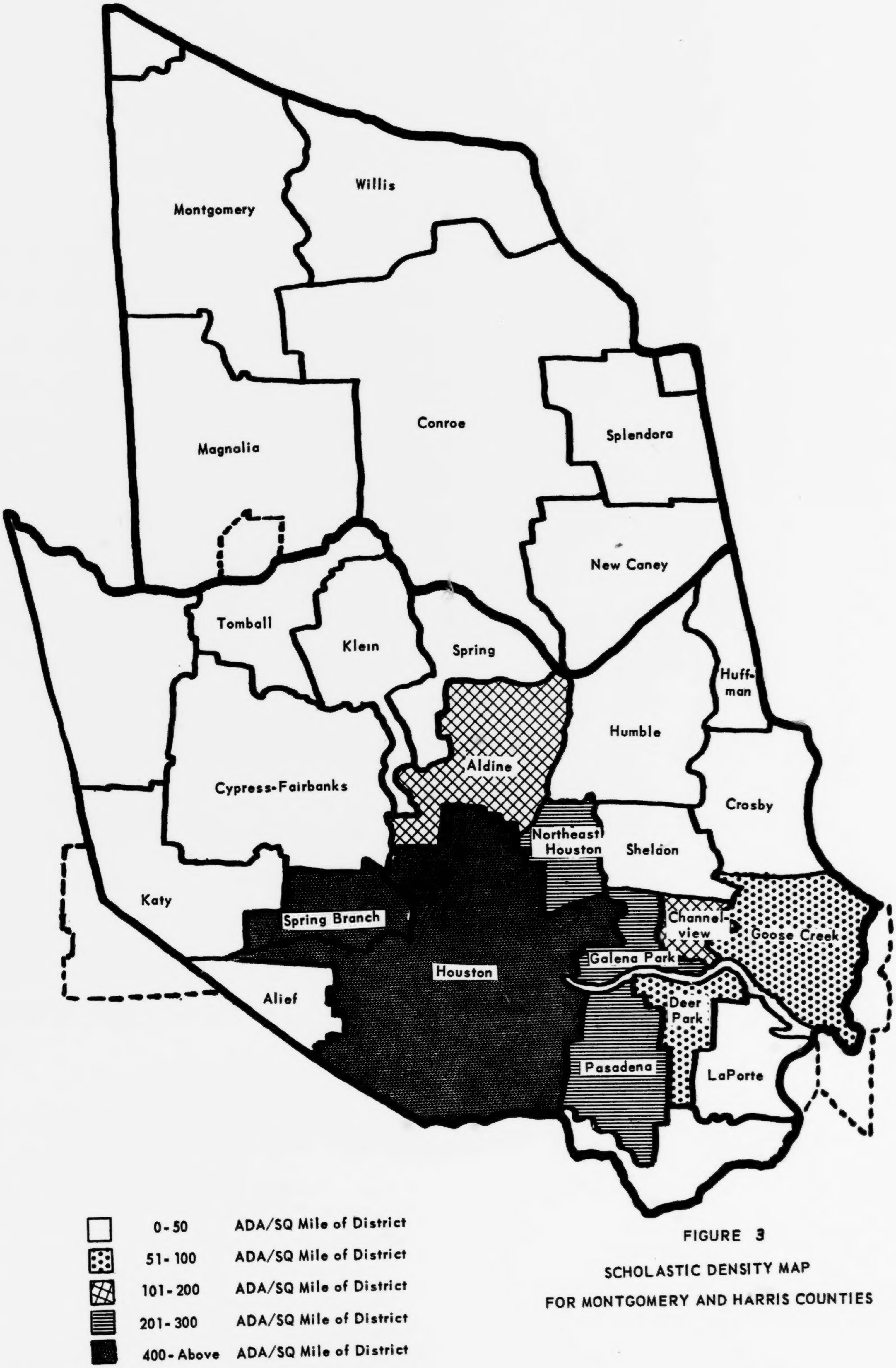

Montgomery
Willis
Conroe
Magnolia
Splendora
New Caney
Tomball
Klein
Spring
Huff-man
Humble
Aldine
Cypress-Fairbanks
Crosby
Northeast Houston
Sheldon
Katy
Spring Branch
Channel-view
Goose Creek
Galena Park
Houston
Alief
Deer Park
Pasadena
LaPorte
0-50 ADA/SQ Mile of District
51-100 ADA/SQ Mile of District
101-200 ADA/SQ Mile of District
201-300 ADA/SQ Mile of District
400-Above ADA/SQ Mile of District

FIGURE 3

SCHOLASTIC DENSITY MAP
FOR MONTGOMERY AND HARRIS COUNTIES

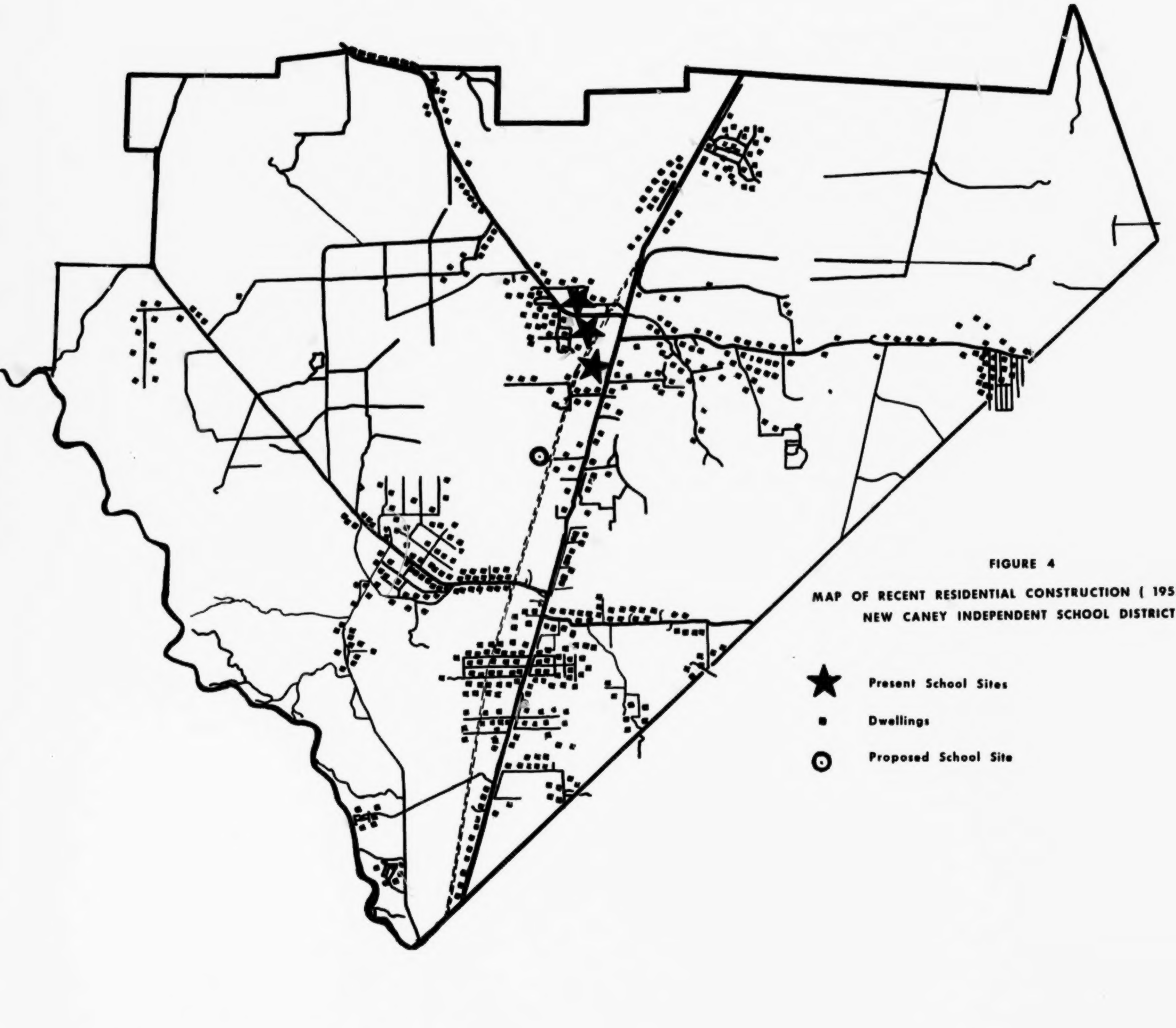


FIGURE 4

MAP OF RECENT RESIDENTIAL CONSTRUCTION (1953-1963)
NEW CANEY INDEPENDENT SCHOOL DISTRICT

★ Present School Sites

■ Dwellings

◎ Proposed School Site

has been done in the district since 1945 and will be reflected in a constant demand for an upgrading in the New Caney district's educational program.

The location of the new central high school site is near the geographical center of the district. It will provide equal access to all the newer residential developments, particularly those which will be near the access roads and high speed facility of the Eastex Freeway.

SCHOOL POPULATION TRENDS

The school population in New Caney Independent School District had a marked decrease from 1952-53 until 1957-58, as is shown by the decline in average daily attendance in Table II. The region suffered from a loss of several regional industries and the general trend of population movement away from rural areas, which was accelerated in this case by the absence of local employment and opportunity for youth. The average daily attendance began to increase in 1958.

With the completion of the Eastex Freeway to the southern boundary of the school district, the region was rediscovered as an area highly desirable for suburban or semi-rural living. In Table III that gives the scholastic census of the district by age for the past decade, the marked increase in number of scholastics during the past five years is contrasted against the previous period.

FINANCIAL ABILITY OF THE DISTRICT

The financial position of the New Caney Independent School District has had considerable improvement and a steady growth both in income and expenditure. The character of property valuations is such as to require

TABLE II

AVERAGE DAILY ATTENDANCE BY GRADES: NEW CANEY INDEPENDENT SCHOOL DISTRICT
(White and Negro)
1953-54 to 1962-63

GRADE	1953-54		1954-55		1955-56		1956-57		1957-58		1958-59		1959-60		1960-61		1961-62		1962-63	
	W	N	W	N	W	N	W	N	W	N	W	N	W	N	W	N	W	N	W	N
1	46	5	48	8	26	10	34	6	35	6	38	5	49	5	49	4	67	5	74	4
2	35	4	41	3	33	5	29	6	23	2	42	5	48	4	50	3	58	3	88	5
3	37	6	40	4	49	3	36	4	27	7	33	4	49	5	60	5	58	3	93	3
4	30	8	39	5	36	3	43	2	35	3	34	4	38	4	62	4	63	3	73	4
5	36	5	27	6	38	4	28	5	43	1	33	4	42	4	46	4	70	4	86	3
6	43	8	34	3	30	8	34	2	34	5	45	1	38	4	51	3	56	4	78	4
7	35	2	37	8	33	3	38	7	26	2	40	4	42	1	50	3	64	-	84	3
8	31	3	30	1	36	5	29	3	29	6	31	2	33	4	49	-	50	-	68	3
9	24	-	30	-	22	2	30	-	22	-	26	-	27	-	29	-	53	-	50	-
10	25	-	22	-	28	-	16	-	20	-	17	-	16	-	27	-	26	-	57	-
11	21	-	24	-	19	-	15	-	12	-	15	-	16	-	20	-	25	-	28	-
12	17	-	19	-	21	-	15	-	9	-	13	-	13	-	15	-	19	-	22	-
Totals	380	41	391	38	371	43	347	35	315	32	367	29	411	31	508	26	609	22	801	29

Source: Superintendent's Annual Report.

TABLE III.

SCHOLASTIC CENSUS BY AGE: NEW CANEY INDEPENDENT SCHOOL DISTRICT
(White and Negro)
1953-54 to 1962-63

AGE	1953-54		1954-55		1955-56		1956-57		1957-58		1958-59		1959-60		1960-61		1961-62		1962-63	
	W	N	W	N	W	N	W	N	W	N	W	N	W	N	W	N	W	N	W	N
6	46	1	38	5	23	7	27	3	31	3	26	3	31	2	38	4	61	3	47	4
7	43	4	47	1	44	5	22	8	33	3	35	4	43	5	53	3	42	3	61	3
8	40	10	34	5	46	2	37	5	29	7	36	2	51	4	46	4	59	3	54	4
9	33	11	29	9	41	4	43	3	37	5	27	9	29	3	60	4	56	2	69	2
10	32	5	30	10	34	6	34	4	41	2	37	4	37	6	42	2	64	2	63	3
11	46	6	32	6	26	9	33	7	28	1	47	0	48	3	45	7	50	4	80	2
12	45	8	51	8	38	2	31	9	38	5	30	3	46	1	51	4	53	2	57	4
13	36	5	37	4	39	4	30	2	36	7	28	7	38	3	58	1	57	2	68	2
14	38	3	33	6	37	5	38	4	31	4	33	6	48	7	32	3	57	1	62	2
15	31	3	28	2	30	3	34	6	38	2	38	3	30	5	44	6	38	1	66	1
16	32	5	30	4	34	3	27	5	31	5	43	2	33	2	34	4	27	0	49	1
17	30	3	29	4	28	3	33	1	20	2	27	2	39	1	20	3	30	3	40	1
Totals	452	64	418	64	420	53	389	57	393	46	417	45	473	42	523	45	614	26	706	29

Source: Original enumeration summary sheets (Form FIN-033) for years shown) constant attention and prudent management in order that it can carry the capital improvement program needed to house the children and provide an adequate educational program.

The trend of assessed valuation of taxable property in the New Caney school district has been as follows:

Year	Total Assessed Valuation For School Purposes
1952	$ 802,652.00
1953	806,186.00
1954	802,106.00
1955	1,046,372.00
1956	826,325.00
1957	3,406,260.00
1958	3,490,130.00
1959	3,215,827.00
1960	3,399,475.00
1961	3,476,464.00
1962	3,940,714.00
1963	6,000,000.00 (approx.)

The increase in property valuations has been due primarily to the development of residential property. The relative composition of the property on the 1962 tax roll was as follows:

COMPOSITION OF TAXABLE PROPERTY:
NEW CANEY INDEPENDENT SCHOOL DISTRICT
1962

Residential and Agricultural	$3,369,536.00
Industrial and Transportation	504,810.00
Business	66,368.00
Total	$3,940,714.00

The adjustment in annual valuations for 1963 is due primarily to modernizing of the values used for school tax purposes. The 1963 bond issue for capital improvements would increase the authorized indebtedness for the district to $745,000. The statutes require that outstanding bonded indebtedness be held to a limit of ten per cent of the assessed valuations. This fact alone necessitated that the obsolete valuations of the past be made more realistic and reflect the tremendous increase in actual market value of properties in the area. Such a program also equalizes the tax burden in that the most recently constructed improvements frequently carry an unequal proportion of the tax responsibility.

School budgets of New Caney Independent School District for the past several years have had increases commensurate with the growth in average daily attendance in the student group (refer to Table IV). The primary increases have been brought about by an increasing number of professional persons required to service an increasing number of pupils. Instructional costs have risen from $104,410.42 to $227,436.93 in a period of four years. Proportional increases have occurred in the expenditures for administration and plant operation. The school district budget for 1962-63 assumed that the presently authorized bonds will all be sold and consumed as capital outlay expenditures. Debt service will rise when the schedule for retirement of the 1963 series is activated.

TABLE IV.

COMPARATIVE BUDGETS: NEW CANEY INDEPENDENT SCHOOL DISTRICT
1959-60 to 1962-63

	Classification of Expenditure	Fiscal Years			
		1959 - 60	1960 - 61	1961 - 62	1962 - 63
100	Administration	$ 17,727.05	$ 18,526.15	$ 19,878.30	$ 33,540.00
200	Instruction	104,410.42	121,669.51	146,721.60	227,436.93
300	Attendance Services	00.00	00.00	00.00	2,700.00
400	Health Services	207.66	2,538.05	00.00	500.00
500	Pupil Transportation	17,052.69	19,953.10	17,063.96	21,415.00
600	Operation of Plant	6,636.59	17,756.84	13,402.03	21,125.00
700	Maintenance of Plant	9,491.39	2,699.34	1,694.34	1,450.00
800	Fixed Charges	1,818.93	2,304.78	2,498.47	2,000.00
	Total (For Computing Per Pupil Cost)	157,344.73	185,447.77	201,258.47	310,566.93
900	Food Services	470.98	00.00	00.00	00.00
1000	Student Body Activities	1,279.53	00.00	500.00	2,000.00
1100	Community Services	00.00	00.00	00.00	00.00
	Total (Current Operational Expense)	159,095.24	185,447.77	201,758.70	312,566.93
1200	Capital Outlay	232,850.08	3,577.61	2,457.27	368,782.00
1300	Debt Service	20,019.98	20,252.77	24,161.43	28,705.20
1400	Outgoing Transfers	550.00	436.10	597.20	300.00
	Total (Expenditures for Year)	$412,515.00	$209,714.25	$228,974.60	$710,354.13

Current expense cost per student in average daily attendance has been unsteady for the past several years but will have a tendency to stabilize as rapid growth continues. The school expenditure was $333.34 per pupil in average daily attendance in 1959-60. In 1960-61 this figure increased to $347.28 per student in average daily attendance. The expenditure in 1961-62 dropped sharply to $319.51 per student in average daily attendance. In 1962-63, budgeted expenditure was $387.75. The level of school support in the district has not kept pace with the increased expenditure nationally for education. When the cost of education is considered, the decrease in per pupil expenditure becomes more alarming in that, per dollar expended, less educational service is purchased.

The financial picture would not be complete without an examination of outstanding indebtedness. Several bond issues are outstanding and at the time of the preparation of this report, other bonds are authorized but have not been sold. The amortization schedule for each issue is reported separately by date of issue.

FUNDED DEBT SERVICE REQUIREMENTS - BY SERIES
NEW CANEY INDEPENDENT SCHOOL DISTRICT

Series 1941

Maturity Date of Bonds	Principal	Interest	Total
April 1, 1962	$ 2,000.00	$ 187.50	$ 2,187.50
April 1, 1965	2,000.00	37.50	2,037.50
	Series 1959		
April 15, 1964	3,000.00	10,972.50	13,972.50
April 15, 1964	3,000.00	10,972.50	13,972.50
April 15, 1965	4,000.00	10,832.50	14,832.50
April 15, 1966	5,000.00	10,652.50	15,652.50

Maturity Date of Bonds	Principal	Interest	Total
April 15, 1967	$ 5,000.00	$10,452.50	$15,452.50
April 15, 1968	5,000.00	10,252.50	15,252.50
April 15, 1969	6,000.00	10,032.50	16,032.50
April 15, 1970	6,000.00	9,777.50	15,777.50
April 15, 1971	7,000.00	9,485.00	16,485.00
April 15, 1972	7,000.00	9,170.00	16,170.00
April 15, 1973	8,000.00	8,832.50	16,832.50
April 15, 1974	8,000.00	8,472.50	16,472.50
April 15, 1975	8,000.00	8,112.50	16,112.50
April 15, 1976	9,000.00	7,730.00	16,730.00
April 15, 1977	9,000.00	7,325.00	16,325.00
April 15, 1978	10,000.00	6,897.50	16,897.50
April 15, 1979	10,000.00	6,447.50	16,447.50
April 15, 1980	11,000.00	5,961.25	16,961.25
April 15, 1981	11,000.00	5,438.75	16,438.75
April 15, 1982	12,000.00	4,892.50	16,892.50
April 15, 1983	12,000.00	4,322.50	16,322.50
April 15, 1984	12,000.00	3,752.50	15,752.50
April 15, 1985	13,000.00	3,158.75	16,158.75
April 15, 1986	14,000.00	2,517.50	16,517.50
April 15, 1987	15,000.00	1,828.75	16,828.75
April 15, 1988	15,000.00	1,116.25	16,116.25
April 15, 1989	16,000.00	380.00	16,380.00

Series 1963

Maturity Date of Bonds	Principal	Interest	Total
May 1, 1964	$ 1,000.00	$9,292.50	$10,292.50
May 1, 1965	1,000.00	6,151.25	7,151.25
May 1, 1966	1,000.00	6,113.75	7,113.75
May 1, 1967	1,000.00	6,076.25	7,076.25
May 1, 1968	1,000.00	6,038.75	7,038.75
May 1, 1969	2,000.00	5,982.50	7,982.50
May 1, 1970	2,000.00	5,907.50	7,907.50
May 1, 1971	2,000.00	5,832.50	7,832.50
May 1, 1972	2,000.00	5,757.50	7,757.50
May 1, 1973	2,000.00	5,682.50	7,682.50
May 1, 1974	2,000.00	5,605.00	7,605.00
May 1, 1975	2,000.00	5,525.00	7,525.00
May 1, 1976	2,000.00	5,445.00	7,445.00
May 1, 1977	3,000.00	5,345.00	8,345.00
May 1, 1978	3,000.00	5,225.00	8,225.00
May 1, 1979	4,000.00	5,085.00	9,085.00
May 1, 1980	4,000.00	4,925.00	8,925.00
May 1, 1981	4,000.00	4,760.00	8,760.00
May 1, 1982	4,000.00	4,590.00	8,590.00
May 1, 1983	4,000.00	4,420.00	8,420.00
May 1, 1984	5,000.00	4,228.75	9,228.75
May 1, 1985	5,000.00	4,016.25	9,016.25
May 1, 1986	5,000.00	3,803.75	8,803.75
May 1, 1987	5,000.00	3,591.25	8,591.25
May 1, 1988	5,000.00	3,378.75	8,378.75

Maturity Date of Bonds	Principal	Interest	Total
May 1, 1989	$ 5,000.00	$ 3,166.25	$ 8,166.25
May 1, 1990	13,000.00	2,783.75	15,783.75
May 1, 1991	14,000.00	2,210.00	16,210.00
May 1, 1992	14,000.00	1,615.00	15,615.00
May 1, 1993	15,000.00	998.75	15,998.75
May 1, 1994	16,000.00	340.00	16,340.00

The New Caney Independent School District will carry its legal maximum debt load for some years to come. The student population will continue to increase and the district must be managed carefully to stay within its ability to support the educational program.

EVALUATION OF EXISTING PLANT

For convenience, the existing school sites and plant may be classified as: (1) elementary school, (2) secondary school, and (3) athletic field. This existing school plant was examined and reported to the school superintendent. The primary purpose was inventory and utilization planning. However, some suggestions for renovation and modernization are included below.

The survey team inspected each of the existing school facilities to assess their suitability, structural soundness, building standards, adequacy for educational purposes, and site adequacy. The following inventory lists the existing buildings and their current insurable values:

NAME OF BUILDING	INSURED VALUE
Grade School	$ 75,000.00
Negro School	10,000.00
Band Hall	1,000.00
Lunchroom	15,000.00
Teacherage (East)	3,500.00
Teacherage (West)	3,000.00
Teacherage (Negro)	2,000.00
First Grade Building	6,000.00
Field House	1,500.00
Bus Garage	4,000.00
High School and Gymnasium	228,000.00
Agriculture Building	8,500.00

The special concern of the study revolves around buildings currently being used in the educational program. Many school districts have abandoned entirely the program of providing teacherages, with the exception of those located in remote areas where suitable housing is not available. Maintenance of teacherages by New Caney School District will not be justifiable in the future.

Elementary School

(1) White

The principal building now housing the white elementary school is a one-story brick veneer building with a wood frame. The main portion of the building was built in 1937, with a later addition adding four classrooms. The building contains 12 classrooms, two restrooms, offices, library, health clinic, and a multipurpose room. In separate, temporary buildings the band room, several classrooms, and the cafeteria are housed. It is located on a site comprising 14.03 acres. The principal building has an operational capacity of 320 and an emergency capacity of approximately 436.

Careful analysis on the School Plant Survey Record presents the following profile:

SCHOOL PLANT FACTOR PROFILE
(0 to 10)

		1	2	3	4	5	6	7	8	9	10	Possible Score	Rated Score
Structural	1.1 Building Structure			x								180	70
	1.2 Safety and Circulation					x							
Mechanical	2.1 Heating and Ventilation					x						140	55
	2.2 Plumbing Facilities		x										
	2.3 Electrical Services			x									
	2.4 Illumination		x										
Educational	3.1 Classrooms				x							550	185
	3.2 Special Rooms	x											
	3.3 General Areas						x						
	3.4 Administration Rooms			x									
	3.5 Efficiency				x								
Site	4.1 Site Adequacy						x					130	60
	Total Score											1000	370

A 1000 score represents a modern educational plant with adequate site, sanitation, and safety factors. The major existing elementary building received a 370 rating, which signifies close to abandonment.

Though basically a usable structure with an estimated remaining life of thirty years, the elementary building is badly in need of modernization and maintenance. The electrical and heating systems should be replaced.

The restroom facilities, drinking fountains, and lighting must be improved or modernized to meet good health standards. Extensive waterproofing, maintenance, and redecorating are badly needed. Chalkboards and tackboards need replacing in most rooms. Storage facilities are inadequate for both teachers and students. In addition to these problems the facilities are now housing over five hundred students. It is not recommended that any of the present bond money be spent on this building.

The music and cafeteria buildings which serve both the elementary and high schools should be removed from the site as soon as is possible and utilized elsewhere for storage or maintenance buildings. The main elementary building could be renovated from current tax revenues, keeping in mind the special needs listed. The first-grade frame building could be retained as a two-room temporary classroom building. The cafeteria should be relocated in permanent facilities where better food storage and sanitation facilities could be installed. Surfacing of some playground area and site drainage is needed.

(2) Negro

The negro elementary school is an old frame building that should be abandoned for educational use. Inspection showed that it is badly in need of maintenance and does not have proper sanitary facilities. It does not seem prudent to invest funds for remodeling or rebuilding this unit. No attempt was made to apply the School Plant Survey Record to this building.

Secondary School

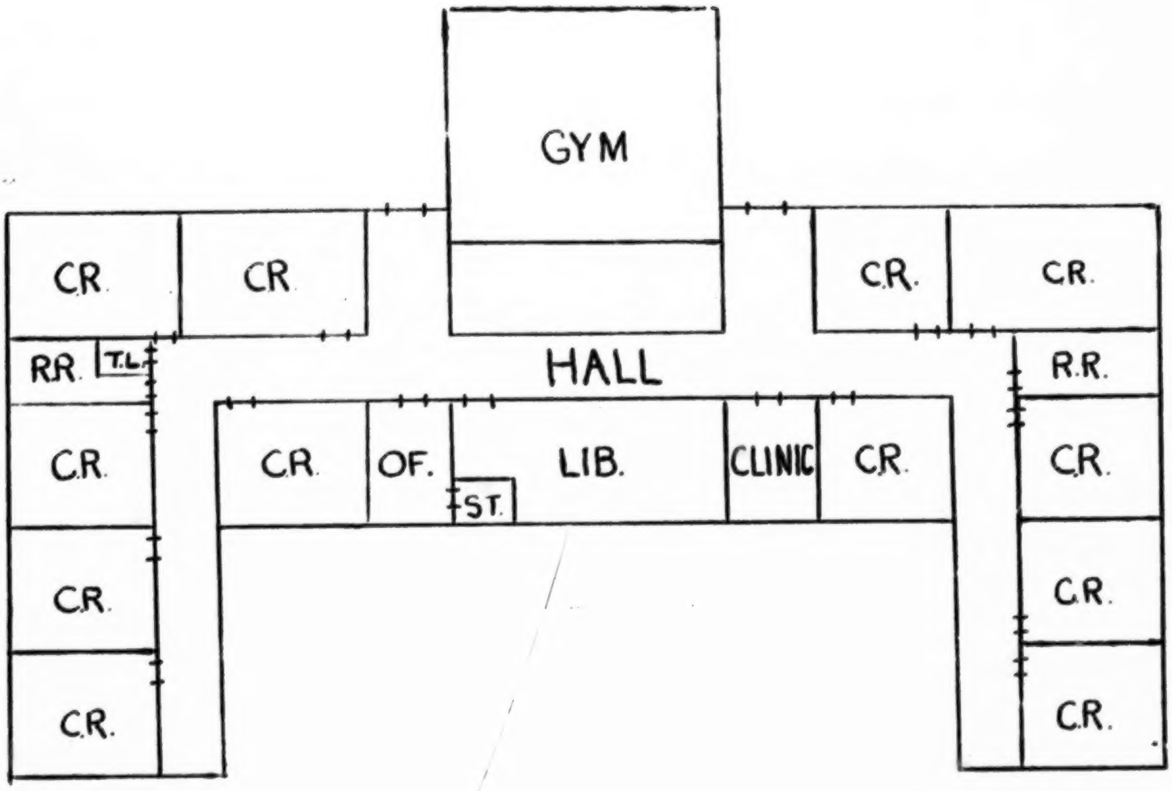
The New Caney high school building was erected in March 1959, and an addition was constructed in 1963. The structure was designed as a single-story masonry building with a steel frame. With its new 1963 addition, the present high school building contains fourteen classrooms, library, gymnasium, science laboratories, offices, homemaking facilities, and health rooms. A small vocational agriculture building of frame structure with masonry walls was constructed in 1960. It contains a shop, classroom, teachers' office and restroom. These facilities are located on 12.6 acres of land. The present high school building has an operational capacity of 420 pupils, and an emergency capacity of 600.

The School Plant Survey Record, when applied by the survey team, yielded a score of 700 out of a 1,000 possible score. The following profile resulted:

SCHOOL PLANT FACTOR PROFILE
(0 to 10)

		1	2	3	4	5	6	7	8	9	10	Possible Score	Rated Score
Structural	1.1 Building Structure									x		180	150
	1.2 Safety and Circulation									x			
Mechanical	2.1 Heating and Ventilation					x						140	120
	2.2 Plumbing Facilities					x							
	2.3 Electrical Services						x						
	2.4 Illumination									x			
Educational	3.1 Classrooms									x		550	420
	3.2 Special Rooms										x		
	3.3 General Areas						x						
	3.4 Administration Rooms							x					
	3.5 Efficiency									x			
Site	4.1 Site Adequacy									x		130	110
											Total Score	1000	700

With proper maintenance, this physical plant would be adequate for a high school enrollment of 420 pupils. The principal needs involve a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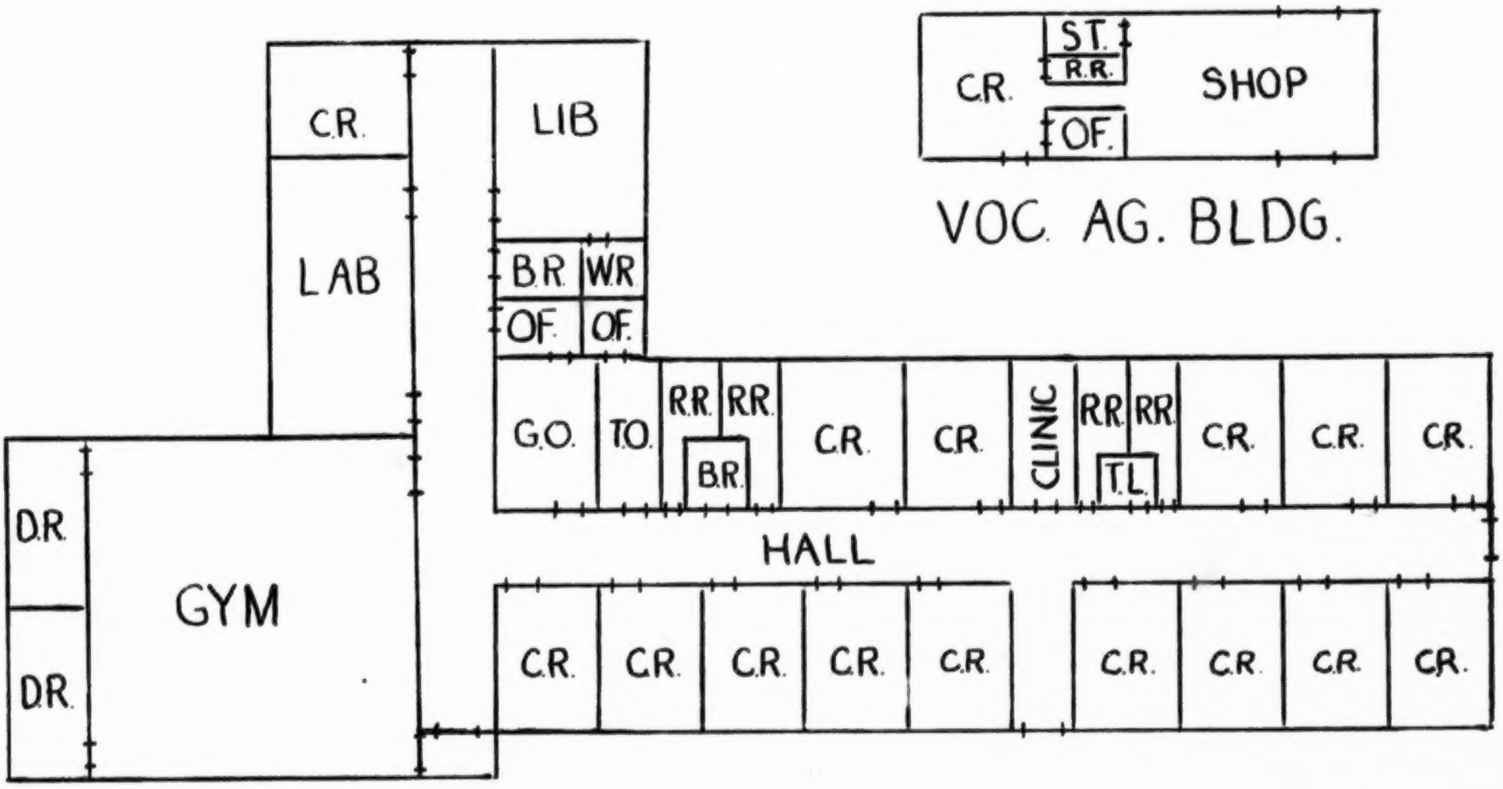
ELEMENTARY SCHOOL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SECONDARY SCHOOL

FIGURE 5

FLOOR PLAN SKETCHES OF THE PERMANENT BUILDINGS NEW CANEY INDEPENDENT SCHOOL DISTRICT

number of minor items. The type of windows installed in the main building offers problems. A number of them require repair and the building cannot be locked in such a way as to provide maximum security. Baseboards were not installed to relieve the discoloration from mop contact on the walls. Institutional quality fixtures were not installed in restrooms when constructed. Sidewalks, blacktopping, and surfaced play areas are lacking. Storage for both faculty and students is inadequate. The physical education area needs more intensive development with baseball diamonds, outdoor basketball, and tennis. This building in the future will probably serve the district for a lengthy period as a junior high school building.

SCHOOL TRANSPORTATION

Transportation of school children is an increasingly expensive item in the New Caney school district budget. Since 1959-60, when transportation costs were $17,052.69, transportation expenditures have risen to a budget item of $21,415.00.

This figure will continue to increase because of several factors:

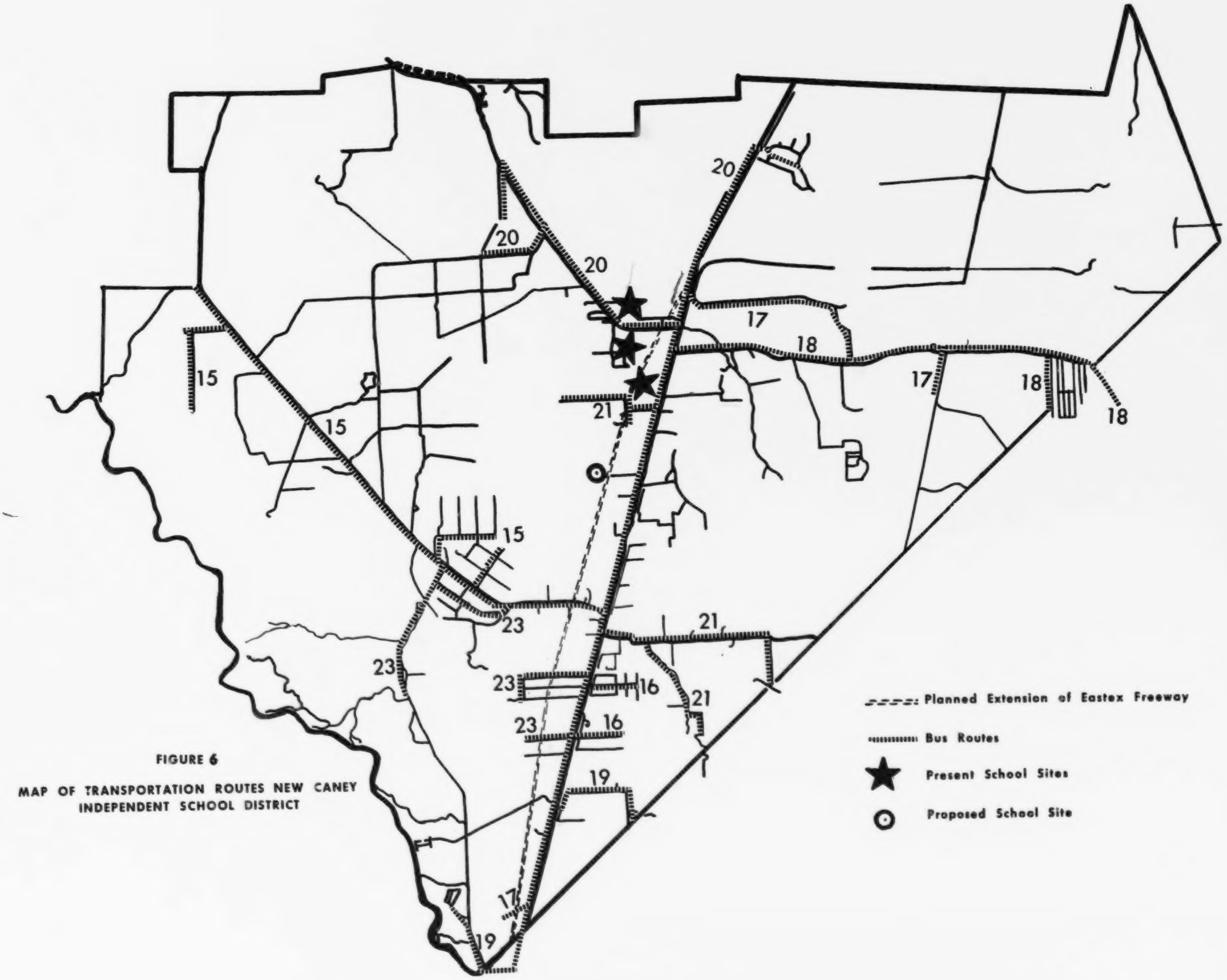
(1) Most of the equipment utilized in the transportation program is now obsolete or worn-out and should be replaced as soon as possible. The equipment is so worn in some instances that it is undependable. As the equipment continues to age and is retained in service, operating costs will continue upwards. Future purchases should be limited to new equipment, if at all possible, because of economies in reduced maintenance and increased dependability and safety factors.

(2) The load of pupils being transported will probably double over the next five years. This increase may be alleviated to some degree by

better dispersion of school facilities and the two-mile rule in regard to transporting pupils.

(3) The transportation routes as currently laid out are shown in Figure 6. The lack of community or county road planning results in many school bus routes traversing the same major arteries. Continuing difficulty will be experienced in serving pupil homes because of the numerous slash-type roads which are constantly being opened to provide access for new homesites. Most of these roads are not well-improved and few are paved.

As a budget item, transportation expenditures must rise sharply to replace worn-out automotive equipment and to extend the necessary transportation services for growth.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Planned Extension of Eastex Freeway
Bus Routes
Present School Sites
Proposed School Site

FIGURE 6

MAP OF TRANSPORTATION ROUTES NEW CANEY INDEPENDENT SCHOOL DISTRICT

PART II

PROJECTION OF DATA

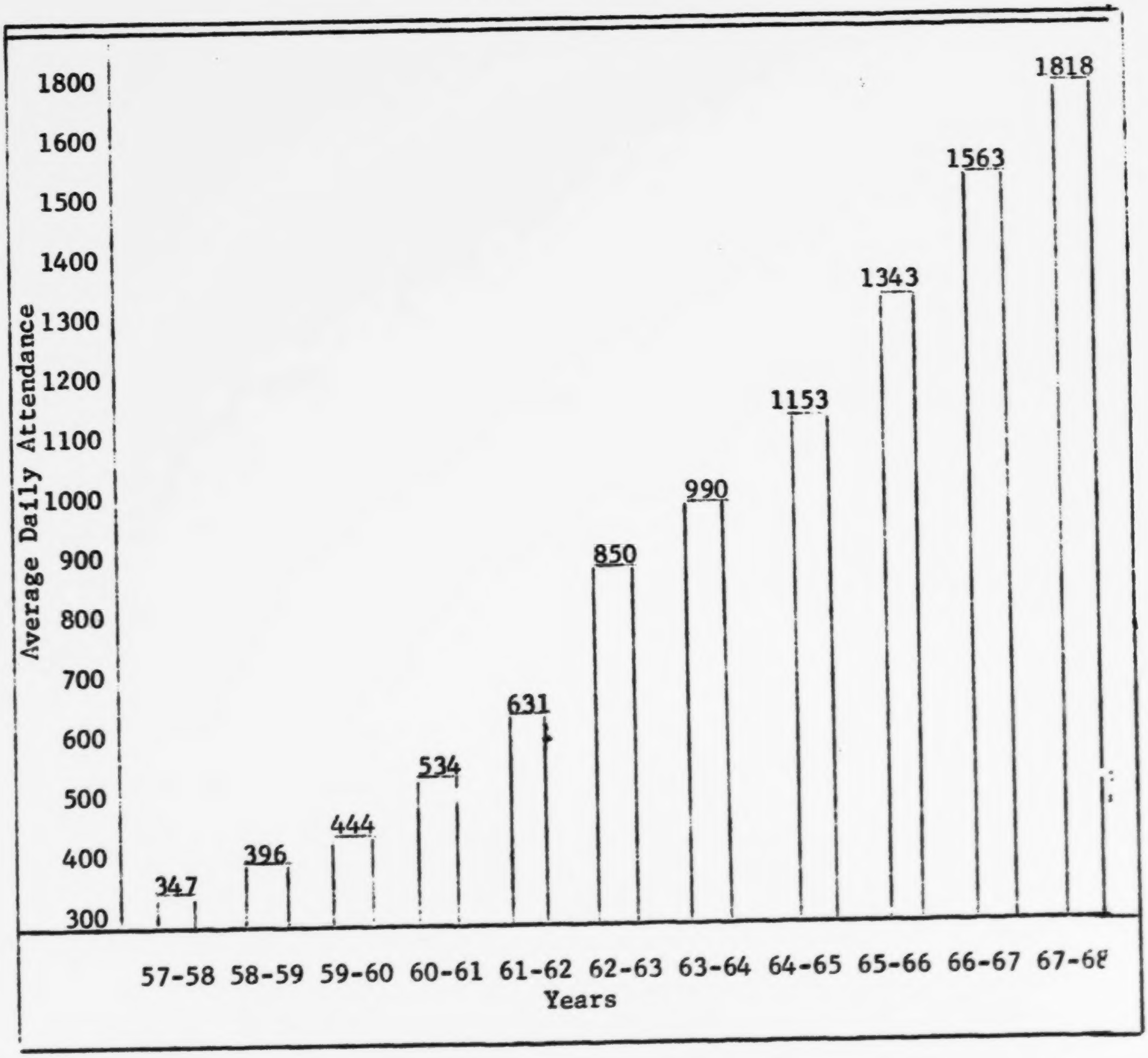
The projection of these data concerning New Caney district into the next five-year and ten-year period appears quite appalling. In fact, it represents a challenge to educational leadership as well as a practical task that cannot be avoided. Part II, on the basis of the foregoing data, covers the following projections: (1) estimated future enrollments, (2) estimated facility needs, (3) suggested future utilization of plant, and (4) recommended program improvement.

ESTIMATED FUTURE ENROLLMENTS

The usual method of predicting school enrollment is to project the number of pupils of each grade successively, year after year, by utilizing a retention ratio applied to the preceding year's enrollment. Ordinarily, a ten-year base of experience is adequate for such calculations. This method was discarded by the survey team after an examination of the record of average daily attendance for New Caney. The team chose to use an average annual increase figure based upon the five-year period from 1957-58 to 1961-62. The average daily attendance in the New Caney Independent School District has increased on an annual basis of approximately sixteen per cent. The experience record prior to 1957-58 was discarded because of the losses incurred in school enrollments for the preceding period, and the difficulty in projecting relatively small numbers.

TABLE V.

ACTUAL AND ESTIMATED AVERAGE DAILY ATTENDANCE
NEW CANEY INDEPENDENT SCHOOL DISTRICT
1957 to 1967



Growth since 1958-59 has reflected an overflow of the Houston metropolitan area. This population pressure is likely not only to continue but to accelerate as transportation arteries are extended and improved. Barring some unforeseen economic decline or extensive world conflict, the projections in Table V as to future increase in average daily attendance are likely to be conservative on two counts: (1) pupil stations must be provided on the basis of membership not average daily attendance; (2) growth tends to follow geometric progressions rather than arithmetic ones. The number of pupil stations needed will exceed the projections which follow from five to seven per cent, depending upon the district's history regarding absenteeism.

The projection demonstrates that increasing average daily attendance figures for the next five years will necessitate continued expansion of the number of faculty and pupil stations to be made available (refer to Table VI).

TABLE VI

ANTICIPATED PUPIL STATIONS NEEDED BY YEARS
(1963 to 1967)

Year	Projected Average Daily Attendance	Probable Increase in Average Daily Attendance	Probable Increase in Number of Pupil Stations Needed Annually
1963-64	990	140	147
1964-65	1153	163	171
1965-66	1343	190	200
1966-67	1563	220	231
1967-68	1818	255	268
	Five Year Total	968	1017

Calculating needed pupil stations involves an assumed difference of five per cent between average daily attendance and actual daily attendance. The pupil station requirements will be cumulative. Plans should be made to house approximately one thousand additional children within the next five years.

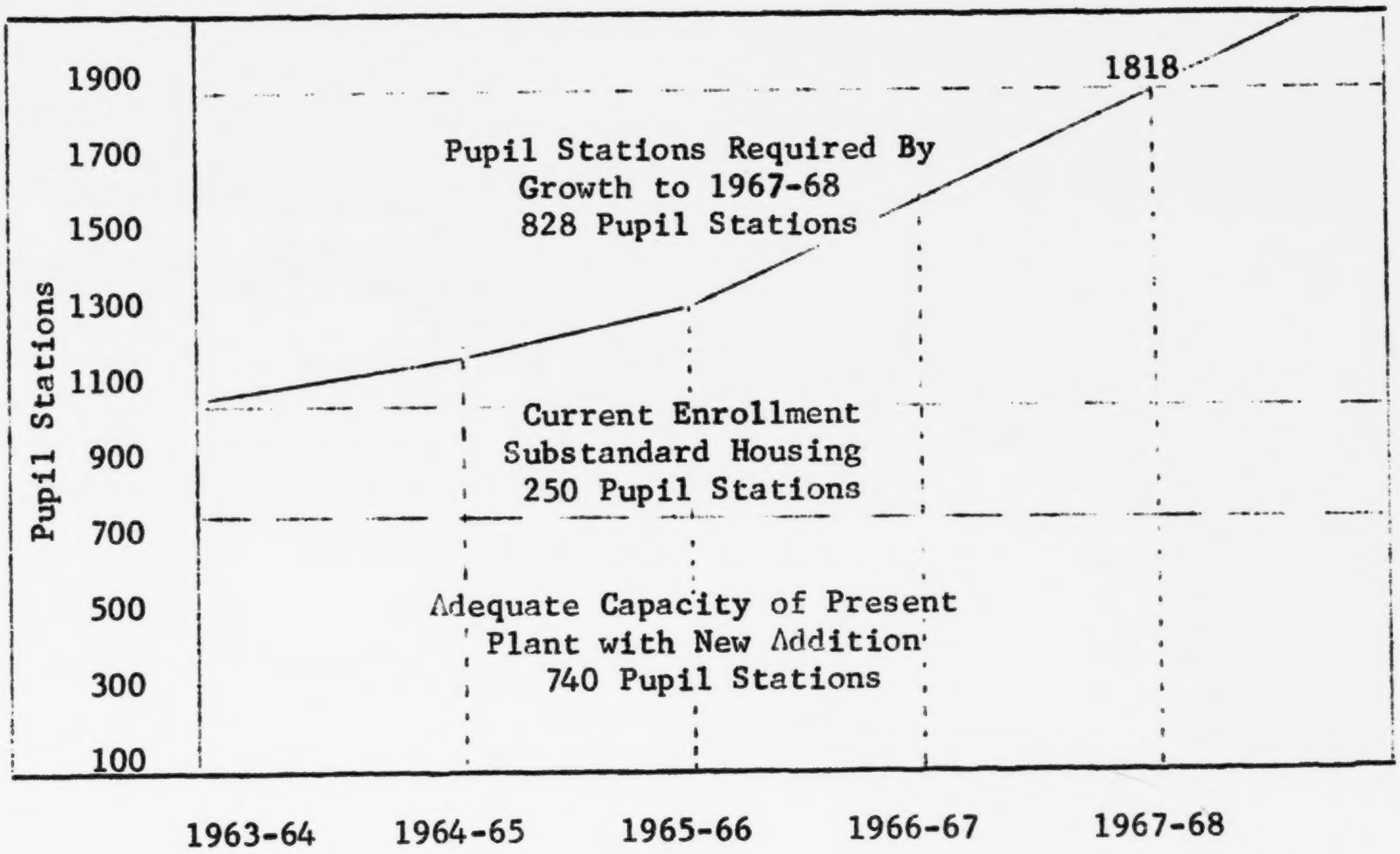


Figure 7. Estimated Pupil Station Needs: New Caney Independent School District (1963-1968) (Based on Average Daily Attendance)

The school population, to be adequately housed for the next five years, will therefore require a minimum of 1,078 pupil stations through new construction. The present addition to the existing high school building has increased the number of adequate pupil stations to 740. There are still 250 students being housed under substandard and inadequate conditions which work against an adequate educational program.

Distribution of Pupil Station Requirements

Assuming that ratios of grade enrollments to total enrollments will remain approximately the same, the distribution of pupil stations may be calculated for the final year of the projection period 1967-68 (Figure 7).

When the 1818 average daily attendance is reached, the needs at various levels will be as follows:

Grade	Ratio of Grade/ Total ADA	Anticipated Pupil Station Requirement (1967-68)
1	.092	167
2	.109	199
3	.116	209
4	.092	166
5	.108	195
6	.097	177
7	.105	191
8	.085	155
9	.062	113
10	.071	129
11	.035	64
12	.027	53

FUTURE UTILIZATION OF PLANT

With all planning factors in view, the following long-range school plant development will be required by 1967-68: A total capacity of 1818 pupil stations. If current ratios of average daily attendance continue, the following school population will exist:

School	Grade Levels	Total Pupils in Average Daily Attendance
Elementary Schools	Grades 1-6	1113
Junior High School	Grades 7-9	459
Senior High School	Grades 10-12	246

Two elementary schools will adequately service the district at the end of the projected period. In accordance with trends in pupil residence and projected service areas, the present elementary plant will need to be remodeled and continued in use temporarily as a primary school. The present high school will succeed as an intermediate grade elementary. A second elementary school should be built in the Porter area to serve the southern half of the district. This second elementary school will require an estimated twenty classroom units.

The central site should be developed with the eventual plan in mind of a combination junior and senior high school to be located there. If grades seven through twelve are housed at a central site, a minimum of 700 pupils in average attendance will be available by 1967.

An enrollment of 1,818 pupils in average daily attendance will be drawn from a district with a density 20.3 students per square mile. When this is compared with Aldine Independent School District to the south which has a density of A.D.A./square mile of more than 100, it is evident that each building unit must be built with a flexible, expansible plan for future utilization beyond 1967.

PROGRAM IMPROVEMENT

The increase in educational space which will result from the current bond issue should have a two-fold benefit: (1) it will alleviate, at least temporarily, the overcrowding of physical facilities permitting the normal function of school facilities, and (2) it will enable the development of a plant suited to a distinctively appropriate program or educational plan formulated for the New Caney Independent School District.

Elementary School

For the present year little change can be anticipated because the seven classrooms added to the high school building are not sufficient space to relieve overcrowded and inadequate facilities from the previous year. The gain in average daily attendance to be experienced during the current school year will fill the new facilities. Therefore, immediate steps should be taken to implement the central site development plan.

Additional emphasis should be placed upon the elementary curriculum development program begun in 1962-63. The reading program as well as a program in modern mathematics should be further developed. Additional remedial programs and guidance assistance is needed.

If the first unit on the central site were utilized temporarily as an intermediate grade unit, the advantages of grouping and team teaching might be explored. Consideration might also be given to an ungraded primary unit if feasible in the present elementary building to be used as a primary school. Renovation of the present elementary building would greatly improve sanitation and safety features of the building.

Relief from the overcrowding in the existing plant will permit needed skills in library work and supplemental reading to be developed. Improvement of physical facilities for intermediate grades will create better environment and permit a higher level of professional work and achievement.

Secondary Schools

The addition of a seven-classroom wing to the high school building has contributed to an improved educational situation. The additional space immediately frees the library area for individual research and writing opportunities for students. Reorganization of the administrative office, nursing, and guidance offices has improved the working efficiency of the professional staff.

Development of the educational program as proposed by the professional staff and the survey team should take into consideration the district's educational purposes, discernible trends, organization of instruction, and learning activities as well as specific courses to be offered. Possible reorganization into a 5-3-4 or other organizational pattern might facilitate development of the organized curricular program best suited to student needs of the district. As the district improves, it is obvious that a larger percentage of students will be planning to attend college. Additional stress, too, must be given a greater variety of curricula in the vocational and technical areas to accommodate other students for entrance into business and industry.

The creation of a new central campus for the secondary school presents a unique opportunity for designing facilities that would make such programs operate within a functionally favorable environment. The general program development of the future should emphasize a departmental arrangement with facilities keyed to the discernible trends for the future. Classroom arrangement should make provision for both large and small group instruction and should feature expansibility and flexibility. The program of education for the next decade or two will be greatly influenced by growth and change as these seem to be the marked characteristics of our society. A suburban clientele will demand that its educational program keep pace with the times.

PART III

EDUCATIONAL SPECIFICATIONS

The object of Part III of this report is to detail the educatioanl requirements for the school plant as a whole, and for each department of the secondary school specifically, in terms of space needs, program to be accommodated, pupil load and activities, relationships of space, and special facilities.

The administrators and faculty of the New Caney school district have contributed to each section of the educational specifications according to the following outline:

(1) Purposes of department
(2) Discernible trends
(3) Organization and activities
(4) Probable courses offered (enrollments by grades; number and size of classes)
(5) Space requirements:
    (a) Subject fields and grade levels
    (b) Types of spaces and gross square feet
    (c) Number of classrooms
    (d) Number of pupil stations
    (e) Room characteristics

        (f) Supplementary areas (gross square feet)

(6) General area relationships

(7) Internal traffic

(8) Storage

(9) Special requirements

(10) Permanent furnishings and equipment

(11) Alternative utilization of space

The information is organized in two sections. First is a statement of "general standards." This includes general considerations in the educational specifications, description of a standard classroom, and some detail considerations.

Second is an outline of "departmental requirements." This is set forth in detail as a guide for the architect. The specific details are presented from two points of reference: (1) program considerations, and (2) facility considerations.

GENERAL STANDARDS

The new secondary school building will need to be realistic as to cost. A maximum of usable space should be achieved, consistent with the assumption that this is to be a permanent-type construction. The building should symbolize educational advancement in the view of the public, faculty, and students. This can be achieved with simplicity of exterior by showcasing certain educational features, such as the school library. Even the cafeteria in the new high school should have obvious educational purpose and utilization.

This unit of the construction must be considered the beginning of a larger plan; the auditorium, stadium, athletics field, parking areas, bus garage, and other features are to come later with future bond issues. Estimates anticipate future growth of 2x, 3x, or 4x.

Utilities must be adequate; however, future new buildings will have to pay for their own utilities. Only in the planning and arrangement of utilities is the future growth provided for.

General Considerations of the Educational Specifications

(1) In general, NCSC (National Council on Schoolhouse Construction) standards are observed. (Note: This applies to lavatories, drinking fountains, exits, safety features, etc.)[1]

(2) Standards of illumination will depend upon the plan type; if natural lighting is not used, the artificial illumination standard should be 70 ft. candles.

(3) The new secondary school plant is to be air-conditioned.

(4) The areas of the plant are to be zoned, as indicated in the following chapter.

(5) Custodial closets and sinks shall be provided.

(6) Grounds shall be planned by the architect as to (a) play areas, (b) parking, (c) driveways, (d)drinking fountains, (e) landscaping, (f) plot plan.

(7) Student lockers for 400 students shall be provided in alcoves off the corridors in convenient locations. (Note: Lockers in corridors take excessive space for swinging doors, and also delay the flow of traffic.)

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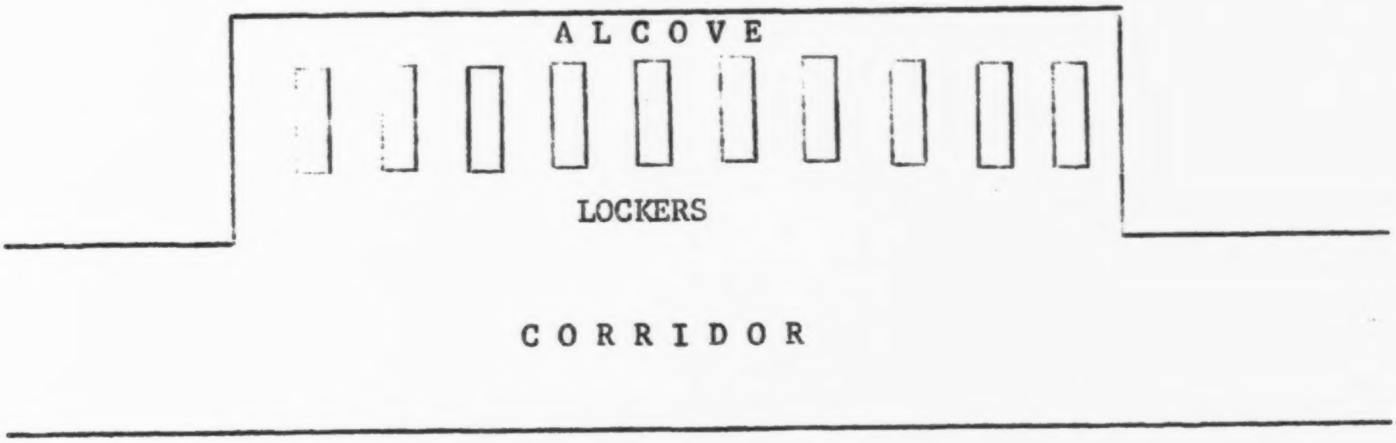
[1] Guide for Planning School Plants, National Council on Schoolhouse Construction, 1958 (Revised Ed. 1964).

Locker alcoves should be located with a view to faculty supervision. Detail of locker alcoves:



(8) Corridors, alcoves, storage rooms, etc., shall be well-lighted.

(9) Exterior lights are to be designed for night use and security.

(10) Corridors are to have terrazzo floors. (The following chapter suggests carpeting in special areas.) Other floors are to be easily maintained with base boards, molded corners, etc. Corridor wainscote to be easily maintained.

(11) Exits are to have lights and panic locks.

(12) Institutional quality hardware is to be used throughout.

(13) Acoustical separation shall be included in the plan.

(14) Grounds are to be graded for drainage.

(15) Architect will specify maintenance program.

(16) Minimum of exterior painting is recommended.

Standard Classroom (Definition)

California laws provide for a minimum of 85 sq. ft. per secondary school student; this, of course, includes all related spaces.

For a standard high school classroom, 35 sq. ft. per pupil station is recommended; or 900 sq. ft. for a 30-pupil classroom. This space must include, besides pupil desks and chairs, the aisle spaces, the circulating spaces, the teacher station, the chalkboard stations, the storage cabinets, all classroom equipment, a utility table space, and space taken by swinging doors, building equipment, etc. It is evident that the thirty student desks take up less than half the required area.

Even though 30 pupils could, on an emergency basis, be crowded into smaller rooms, the planning for such substandard spaces would prove in the long run very uneconomical. Some classes will exceed 30 pupils. Utilization of rooms keeps changing, and smaller rooms become unusable and thus idle. On the whole, the recommended size is most flexible and efficient.

Following are descriptive features of the standard classroom:

(1) Multiple orientation of classrooms is recommended. That is to say, the teacher station does not always remain in the traditional lecture location. The work in many classes requires the teacher to instruct from different quarters of the room. This affects optimum shape of room and illumination.

(2) Rather than built-in features in standard classrooms, this report recommends free-standing, modular or dimensioned cabinets. Each room should have bookcases for 400 volumes. Cabinets should be designed for maps, charts, drawing paper, supplies, and teaching materials.

(3) Each room should have 1/4 to 1/2 of wall spread in chalkboard.

(4) Each room should have 1/8 of wall spread in bulletin board. (Other dual use wall aids may be specified.)

(5) Seating should be flexible. Stacking furniture is often desirable.

(6) Trapezoidal tables should be provided for occasional use.

(7) Teacher's desk should be standard two-pedestal.

(8) Visitor's chairs should be available.

(9) Classrooms are to be air-conditioned.

(10) Illumination is to be uniform and controllable.

(11) Various departments will have special requirements (e.g., darkening shades, visual aids screens, map holders, display cabinets, etc.) to be specified. These features do not affect the basic plan of a standard classroom if space is adequate.

(12) Electric outlets are to be installed on all sides of rooms.

(13) Two corridor doors may be used (optional).

(14) Acoustical treatment should be included.

Additional Considerations

(1) All furniture (to be specified).

(2) All equipment (to be specified).

(3) Fire extinguishers.

(4) Window shades (venetian).

(5) Public Address system.

(6) Bell and clock system.

(7) Lavatory equipment: soap, paper dispensers, mirrors.

(8) Special exhaust fans (to be specified as required).

(9) Central heating system (optional - electrical heating).

DEPARTMENTAL REQUIREMENTS

An approach to curricular organization that is considered timely and forceful in improving the standards, procedures, and traditions of a school system is careful departmental planning. Thus, your consultants have organized the program of requirements in seven curricular departments of the secondary school, plus the elementary program, the administration, and the service areas (library, guidance, health, food services, and transportation). The seven curricular departments or categories are:

(a) Language Arts
(b) Social Studies
(c) Science and Mathematics
(d) Physical Education
(e) Practical Arts
(f) Fine Arts
(g) Business Education

A careful analysis of the present program and future needs in New Caney Independent School District was prepared by the school officials and consultants. The instructional staff participated by contributing data and proposals according to an eleven-point outline which was provided them (see page 38). This analysis formed the basis for the following program and facility recommendations.

In order to determine the number, kind, and size of educational spaces required to house the secondary school population, the following procedures were employed: (1) The numbers of students that could normally be expected to enroll in each of the required and elective courses were estimated on the basis of previous experience and probable program trends. (2) This information was translated into number of periods and number of teaching stations. (3) Subject areas which share common objectives and functions were grouped together.

This determined the space requirements for the respective area complexes described below. Each department will be discussed individually and specific requirements stated in detail.

LANGUAGE ARTS

Included in Language Arts are four years of English required for graduation in Texas accredited high schools, and the foreign languages as well as such special branches of language arts as speech, drama, debate, journalism, and the student programs that constitute laboratory extensions of the language arts classes.

On the surface it would appear that if all children take English five periods a week in all four high school grades, it would be a simple matter to estimate the classrooms required to accommodate the English curriculum. Basically this is true, but careful observation of the program reveals that many activities are presented on a platform or stage, with the community invited as spectators (e.g., dramatics, graduation ceremonies, assemblies with speakers, and special programs); that allowance must be made for many practice sessions; that publications such as school newspapers, senior yearbooks, and the like all have specific facility needs to be met.

Since foreign languages are included in the language arts field, this suggests a need for modern teaching facilities such as individual recording and playback equipment to be properly housed.

I. Purposes of the Department of Language Arts

Basic to man's progress is an understanding of, and ability to use, the skills of written and oral communication. Each student, during his high school program of study, should have opportunity to develop these understandings and skills according to his own capacity. Along with this development should also come appreciation and use of the various literary forms.

The broad subject matter courses in English should be designed to include a continuous sequence of experiences in order to deepen and broaden the student's experiences and understandings in the interpretation and use of language. A knowledge of these factors commits the English department to a broad comprehensive program designed for personal and individual improvement.

Foreign language study at the high school level is designed to teach and develop basic verbal and written communication skills. The study of a foreign language should also acquaint the individual student with the customs and cultures of the particular country or area. Students should be encouraged to master the particular language they choose to study.

The major purposes of the Department of Language Arts may be stated as follows:

A. Continuity and sequence in English language development.

   (1) To create an environment favorable to language growth and vocabulary development.

   (2) To promote overall growth in skills of reading, listening, observing, speaking, and writing.

   (3) To provide opportunities for students to practice self-expression, both written and oral.

   (4) To develop good reading habits leading to appreciation of, and attitudes toward, literature which

will extend from school reading to a later program of personal reading.

B. Balance in English language development.

  (1) A blending of both skills and content at the various levels of development, as indicated by grade level achievement.

  (2) Special attention to vertical articulation between grades as to level of materials presented, and length of time spent in various areas of study.

C. Proficiency in speaking, reading, writing, and understanding a second or foreign language, and stimulation of interest in the customs and culture of other countries.

  (1) Bi-lingual speech is a basic objective of all modern language courses.

  (2) High school foreign language programs should be carefully articulated in order to capitalize on the student's previous language experiences where the language has been taught in the elementary and junior high levels.

II. Discernible Trends in Language Arts

A. Grammar, spelling, and language usage taught in relation to content and application, rather than as separate learning situations.

B. Literature study involving the functions of language and semantics, as well as for ideas and literary elements of structure, style, etc.

C. More attention to habits and patterns of expression as used by the individual student in purposeful situations involving personal, technical, and literary uses of language.

D. A closer correlation between the reading program and the specific personal needs of the student as an individual.

E. Use of television, other audio-visual aids, and an effective language laboratory situation have become essential to an adequate program of foreign languages.

F. Foreign languages are being offered much earlier in the students' formal school experience, often as early as the first and second grades.

G. Attempts are being made to present a continuous, well-articulated program from the first foreign language experience through the senior high school level.

H. All students are encouraged to be at least bi-lingual where any interest and ability is manifested.

III. Organization and Activities in Language Arts

A. Departmental organization should be such as to utilize special skills and interests of faculty members in gradually incorporating the patterns of team teaching into the program of language arts.

Included among the values of team teaching are:

(1) To provide opportunities for group planning.

(2) To provide a means for capitalizing on the particular strengths of individual teachers.

(3) To foster professional growth by presenting a formal structure in which teachers work together.

(4) To reach out to large and small groups and individuals as well. Team teaching is most effective in

language arts when it is used to foster individualized instruction.

B. Members of the language arts faculty should organize their curriculum guide for the entire language arts program over the four years of high school. This process would insure:

(1) Sequence and continuity of learning experiences.

(2) Designation of topics and areas by grade level, and breadth and depth of study.

(3) Continuity and variety in the student's reading experiences.

(4) Development of more realistic and valid evaluative procedures for reporting student progress.

C. Thought and study should be given to the organization of a language arts laboratory in order to:

(1) Provide space and materials for faculty preparation of lessons.

(2) Provide space and facilities for active student participation in planning and following through with various language arts experiences.

(3) Provide space and facilities for:

(a) group and committee work

(b) television viewing

(c) radio listening

(d) recording of various oral activities

(e) workshop for student publications

(4) Provide meeting place for clubs and intra-curricular activities related to language arts, such as

(a) creative writing clubs

(b) speech and/or drama clubs

(c) language clubs

D. Schools are attempting to present language tracks permitting the student to master one language and start a second language at various grade levels up to and including the eleventh grade.

E. Continuous language laboratory experiences for all language courses.

F. Foreign language clubs, pen pals, exchange classes, and other foreign language-related experiences are encouraged where feasible to provide actual language experiences and to stimulate interest.

G. Among possible course offerings in English language are:

English 9	Speech I
English 10	Speech II
English 11	Journalism I
English 12	Journalism II

H. Among possible course offerings in foreign language are:

(1) The three basic languages: Spanish, French, and German.

(2) Other foreign language courses such as Latin, Russian, Chinese, or Portugese might be offered depending upon interest and available faculty. These courses would not require additional or different facilities.

IV. Probable Courses Offered in Language Arts at New Caney High School

Courses	Grade Level	Estimated Enrollment	Size of Classes	Number of Classes
English	9	120	25	5
English	10	100	25	4
English	11	90	25	4
English	12	75	25	3
Speech-Drama	10-12	30	30	1
Journalism	11-12	15	25	1
Total		430		18
Spanish	9	50	25	2
Spanish	10	30	25	1
Foreign Language	9-12	30	30	1
Total		110		4

V. Space Requirements (Total 4 classrooms)

A. English and related subjects will require:

(1) Three full-size English classrooms of 30 pupil stations each (minimum 900 sq. ft. net each).

(2) Rooms that are interchangeable.

(3) The equipment of a standard multiple-oriented classroom (refer to "standard classroom" above).

(4) Display and work tables.

(5) Spaces to facilitate aisle circulation since various activities are performed.

(6) The speech classes will share the language laboratory (see above).

(7) The drama classes will share the cafeteria (see below).

(8) The journalism classes will share the business education (duplicating machines) equipment.

(9) Supplementary areas (approx. 500 sq. ft.)

  (a) Office for English department to be used by the department head and also for individual student work. (It may be related to the library.)

  (b) Office for speech-drama to be used by the teacher for small group work.

  (c) Office for journalism to be used primarily for student editors and storage. (It should have two or three desk spaces.)

  (d) Storage: in general, free-standing cabinets are recommended. However, adequate space must be provided in the classroom floor plans for such storage. Regarding drama, etc., see "storage" below.

B. Foreign languages will require:

(1) One full-size standard multi-oriented classroom.

(2) Room with service outlets installed for use of language laboratory equipment.

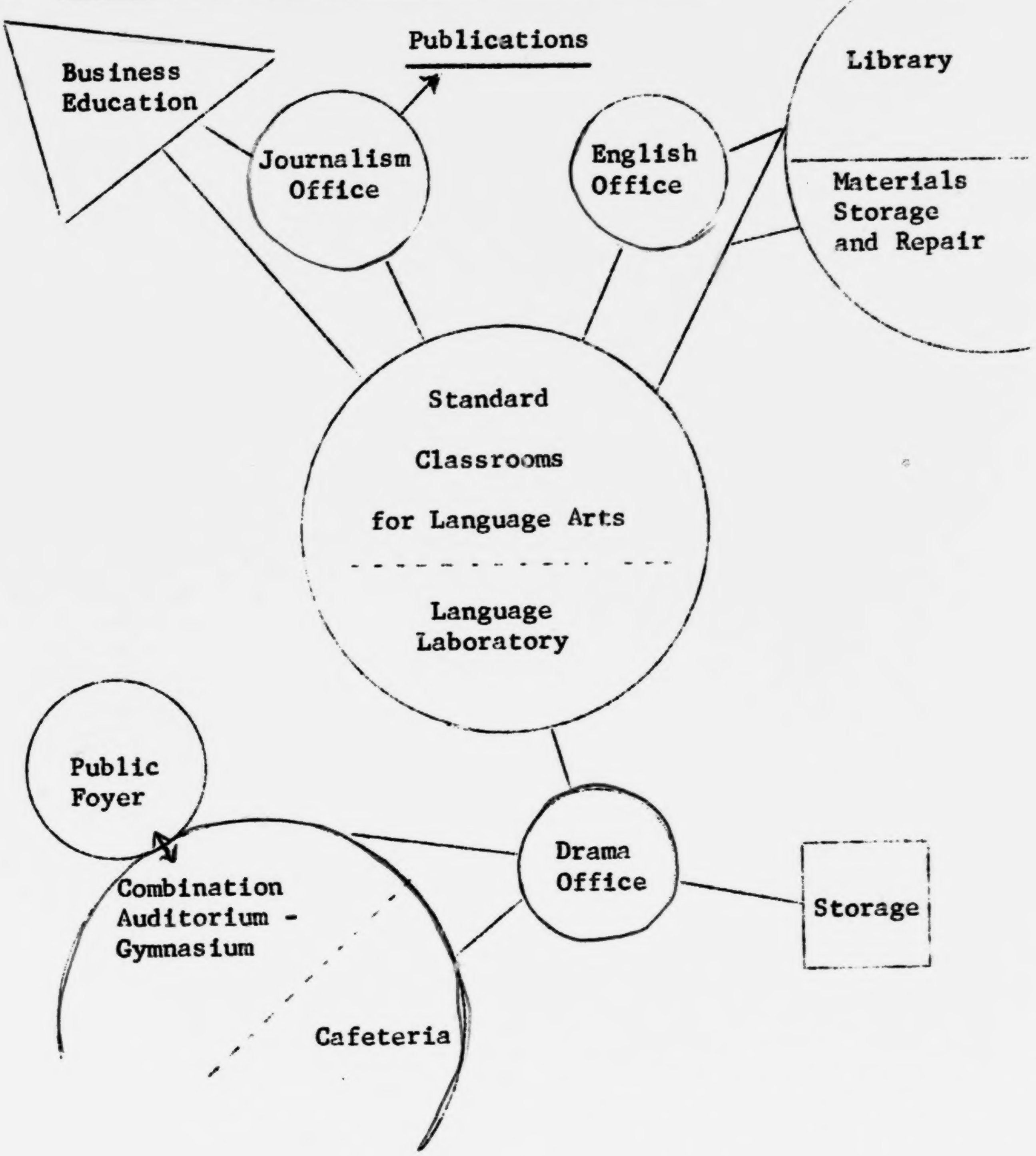
(3) Suitable office desk for the teacher in addition to instructional table.

(4) Thirty pupil-stations.

(5) Special acoustical treatment.

(6) Storage space.

VI. General Area Relationships of Language Arts


Business Education
Publications
Journalism Office
English Office
Library
Materials Storage and Repair
Standard Classrooms for Language Arts
Language Laboratory
Public Foyer
Combination Auditorium - Gymnasium
Cafeteria
Drama Office
Storage

VII. Internal Traffic

(1) English classes will study in and use the library during and after school; therefore, close proximity is desirable.

(2) Drama-speech will divide its activities among the language laboratory, cafeteria, and auditorium.

(3) Journalism will have seminar classes and do production work.

(4) Exhibition of English department work is frequent: e.g.,

debate, drama, ceremonies, displays. Thus, the public reception space (foyer) must be adequate.

(5) Expansibility: the plan must contemplate future expansion of the English department enrollment to 3x or 4x.

VIII. Storage

(1) Free-standing cabinets (to be specified).

(2) Special foreign language equipment storage (to be specified).

(3) Executive type desks for teachers' storage and offices.

(4) Stage properties.

(5) Supplies storage (to be specified).

IX. Special Requirements

(1) Cafeteria should handle speech, public speaking, debate, small drama, etc. Audience of 250.

(2) Library should have hot and cold running water in workroom.

(3) Offices should be well-lighted and adequately ventilated.

(4) Public lavatories, ticket sales, storage off the foyer.

(5) Display cabinets built in corridor walls.

(6) Language laboratory equipment (to be specified).

X. Permanent Furnishings and Equipment

(To be specified.)

XI. Alternative Utilization of Spaces

(1) The English rooms and language laboratory will be utilized full time by the initial enrollment. The future problem will be expansibility.

(2) However, these classes will share

  (a) Library.

  (b) Business machines.

(c) Auditorium-gymnasium (after school hours).

(d) Cafeteria (during school hours). The cafeteria should be space-divided so that the drama-speech activities utilize only the required area: i.e., platform and 250 audience section, plus related storage of stage equipment and seating.

SOCIAL STUDIES

In recent years Social Studies has become a departmental term including such branches as history, geography, sociology, economics, government, civics, citizenship, and laboratory extensions (e.g., student council, school assemblies, advanced work for gifted students, etc.) The assumption is that New Caney school district will have a department chairman for Social Studies as they would for Language Arts, Science-Mathematics, or Physical Education.

The department of social studies should exercise a leadership role in helping students develop into individuals who are personally well-balanced, possess a social and economic awareness of their culture and society, and its position and responsibilities at national and international levels. Social studies must also guide the individual in the development of abilities and skills which will enable him to make a mature and intelligent contribution to his society.

To accomplish these ends, the arrangement of areas in social studies must be concerned with activities and experiences over and beyond the ability to recognize or recall information about people, places, and events. This department requires somewhat generalized, multi-purpose classrooms furnished for their prescribed activities. The department has problems of storage and display of learning materials. It makes exceptional use of the library and audio-visual materials center. It has frequent need for small group conference spaces and for individual student research and reference activities. The social studies department tends to combine large class recitation with a laboratory-type or workshop organization plan of instruction.

I. Purposes of the Department of Social Studies

   A. To help the student gain a perspective of the origin, growth, and development of the institutional life of people as it has unfolded through interaction with man's natural and social environment.

   B. To explain the political, social, and economic structure of the American nation, and the privileges and responsibilities of the individual as a contributing citizen and successful member of a democratic society.

   C. To acquaint the individual student with the necessary knowledge and understandings to develop into an intelligent earner and consumer within the business and economic structure of a democratic society.

II. Discernible Trends in Social Studies

   A. Increased emphasis within the classroom on study habits and skills as they relate to the volume of knowledge and desirable outcomes in areas within the structure of social studies.

   B. Shifting of emphasis from a detailed study of how we became what we are today, to an analysis of what principles and concepts are involved in correcting today's problems and anticipating the directions for intelligent growth and development in the future.

C. Aid students in developing and using the skills involved in critical thinking, logical analysis, evaluative procedures, and the ability to discern and interpret the developmental trends in national and international scope of modern living.

D. Sequence and continuity of learning experiences for the individual originating with an understanding of his own personal environment and gradually developing into a knowledge of and identification with city, state, national, and world environments.

III. Organization and Activities

Arrangements for student participation in a large variety of social situations, as well as the use of necessary techniques for acquainting the student with the vast amount of necessary social knowledge, imply the use of many activities and temporary organizational patterns not easily attained through the usual classroom situation.

Some of these more desirable activities are:

A. Intelligent and creative use of recordings, films, slides, tape recorders, overhead projectors, maps, charts, globes, bulletin boards, and field trips.

B. Utilization of commercial television, radio, press, and adult news magazines.

C. Extensive use of the school library.

D. Utilization of community resources.

E. Large group presentations such as special lectures, debates, forums, panel discussions, etc.

F. Committee work and small group discussions.

The scope of an adequate social studies program would suggest the use of some of the successful patterns of team teaching, at least within grade levels. It is also imperative that the teachers in the various subject areas understand and follow an overall master plan to insure a complete range of learning experiences for all students.

The range of course offerings might well include such courses as: Civics, World History, World Geography, History of the United States, Government, Contemporary Problems, Economics, and Sociology.

IV. Probable Courses Offered in Social Studies in New Caney School District

Courses	Grade Level	Estimated Enrollment	Size of Classes	Number of Classes
World History	9	120	30	4
American History	10	100	30	4
Government	12	60	30	2
Economics	12	25	25	1
World Geography	11	30	30	1
Texas History	11	90	30	3
Total		425		15

V. Space Requirements (Total 3 classrooms)

A. Social Studies will require:

(1) Three full-size classrooms of 30 pupil stations each.

(2) A minimum of 900 sq. ft. working area per classroom to provide for storage cabinets, movable seating, tables for group work, etc.

(3) Storage space for materials and teaching equipment class-

room storage (maps, charts, projectors, globes, supplies). Free-standing cabinets designed for the purpose are recommended to allow flexibility of usage.

(4) Rooms with equipment of a standard multiple-oriented classroom (refer to "standard classroom" above).

(5) Ample circulation space. (Teachers should supply the architect with a description of activities).

B. Supplemental areas needed will be:

(1) An office provided for the social studies chairman. This could be planned as part of the library as in the case of the English office and expanded into a seminar and conference room for small-group work.

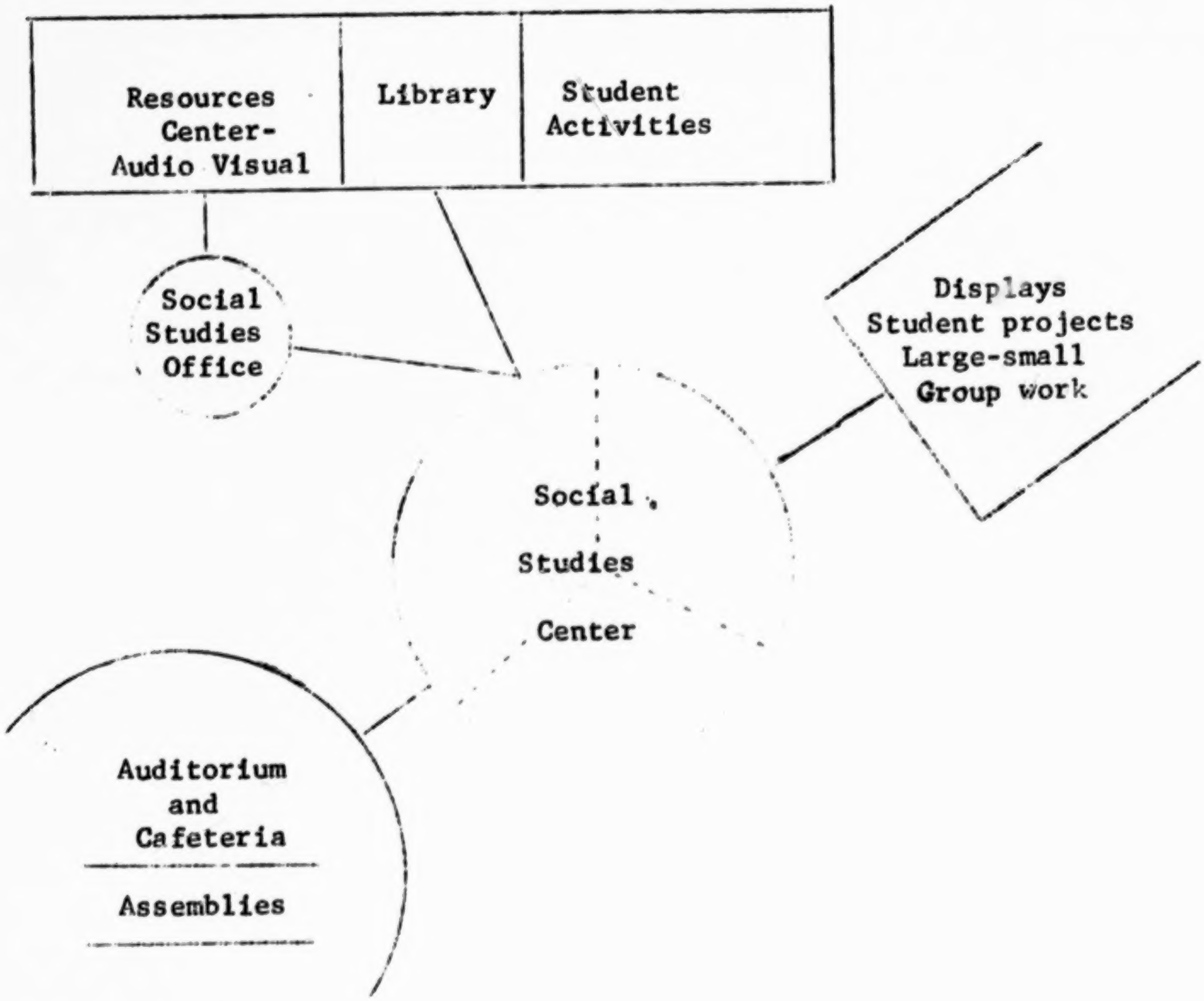
(2) The social studies department will use the library as a study and work area, both during and after school hours.

(3) The library materials and resources center will be planned to serve the learning materials needs of the social studies.

(4) A student activities center would be a valuable laboratory extension of the social studies.

C. Team teaching would be desirable. This indicates the option of three social studies classrooms forming a triad so that groups of 30-60-90 could be taught.

VI. General Area Relationships in Social Studies


Resources Center- Audio Visual
Library
Student Activities
Social Studies Office
Displays
Student projects
Large-small
Group work
Social Studies Center
Auditorium and Cafeteria
Assemblies

VII. Internal Traffic

(1) Extensive use of library is anticipated.

(2) Classes must allow for optional orientation toward

- (a) Audio-visual,
- (b) Television,
- (c) Lectures,
- (d) Class recitation,
- (e) Student presentations.

(3) Classes must allow for 30-60-90 grouping for a part of the time.

(4) Classes must allow for workshop or laboratory techniques where pupils work in small groups around tables.

(5) Classrooms must allow for various types of exhibits.

(6) Storage cabinets should be designed so as not to destroy sufficient use of wall spaces for chalkboard and exhibits. This may indicate a central storage room for the classroom triad as has been found useful in science laboratories.

VIII. Storage

(1) Free-standing cabinets specially designed for the types of learning materials: charts, maps, globes, magazines, vertical files.

(2) Bookcases and racks should be standard equipment in social studies rooms. (__ ft. book shelving per classroom.)

(3) Supply room should be accessible.

(4) Major storage will be in the library resources center.

IX. Special Requirements

(1) Television.

(2) Darkening shades.

(3) Built-in projection screen.

(4) Bulletin board.

(5) Small conference rooms.

(6) Student activities center.

(7) Teacher planning center for team teaching (e.g., social studies office).

X. Permanent Furnishings and Equipment

(To be specified).

XI. Alternative Utilization of Space

The social studies classrooms can be interchangeable with other academic subjects.

The plan should provide for expansibility in enrollment of 3x or 4x. If the team teaching plan is acceptable for the major required courses in social studies, there should be allowance for adding classroom triads and related offices, conference room, and materials storage as enrollment increases.

MATHEMATICS-SCIENCE

The fields of mathematics and science are closely related in content. Mathematics is also basic to other fields such as business, vocational subjects, etc. Science, too, is related to other fields such as technical subjects, management, etc.

Mathematics is a tool for many areas of endeavor, both in the pursuit of knowledge and in daily living. Everyone needs some basic skills in this area.

Science, as a broad academic area, utilizes the skills of mathematics more than any other study. The logic of mathematics and the processes and understandings of science are not only complementary but also often interdependent, making a natural combination area for experiences required of all students.

Probably mathematics and science should be organized as separate sub-departments. Certainly these fields require separate planning with respect to building space and equipment. But the substantial curriculum relationships would justify considering these fields together as a unit in planning the space utilization of the school plant.

I. Purposes of the Mathematics-Science Area

A. The Mathematics Department

New and increased emphasis upon the study of mathematics has caused rapid and marked changes not only in curriculum organization, but also in objectives and instruction. The mathematics laboratory has become an essential medium for providing a wide range of experiences with mathematics models, computing machines, and the interpretation of mathematical concepts.

General objectives of the mathematics department are:

(1) To develop the student's ability to solve problems.

(2) To help students learn how to think abstractly, independently, and logically.

(3) To develop skill in the basic mathematical processes and to foster an understanding of principles behind these processes.

(4) To create an appreciation of the relationship of mathematics to other fields of knowledge.

(5) To give the student those ideas and skills in mathematics that are necessary for living in a technical society.

(6) To provide a mathematics program wherein each student can continuously progress in the acquisition and utilization of mathematical skills.

B. The Science Department

High school science programs must be concerned with effective living in society, as well as specific science offerings in the college preparatory program. In view of the rapid advancement and changing emphasis in science areas, the curriculum must remain flexible and amenable to change. An attempt should be made to provide sufficient opportunity and challenge for the interested individual to make rapid and continuous progress according to his ability. The less interested and/or less able individual should be provided stimulating experiences to enrich his understanding of scientific information and its relation to modern living.

General objectives of the science department are:

(1) To provide the student with an understanding of the nature of scientific inquiry; that science is a continuing, open-ended, intellectual activity constantly growing and changing.

(2) To equip the student with an understanding of how scientific concepts are developed and of how to evaluate new scientific data that become available, and their implications for modern living.

(3) To help the student develop an understanding of his own place in the scheme of nature and an appreciation of the orderliness in nature and science.

(4) To acquaint students with basic laboratory equipment and techniques for use of this equipment.

(5) To help students acquire the specific vocabulary necessary in the study of science.

(6) To provide students with an understanding of science and its effect on our environment so they can perform effectively in a technical society.

(7) To aid students in developing insight into the various fields of science and the understanding they encompass.

II. Discernible Trends in the Mathematics-Science Area

A. Trends in Mathematics Education

(1) Guiding the individual student in a program of mathematics commensurate with his ability and personal needs in relation to his personal educational and vocational aspirations.

(2) The use of programmed learning and mechanical devices in the study of mathematics, making the study of mathematics beyond the Algebra I level a more and more personalized program.

(3) Closer correlation with science as an opportunity to use and refine mathematical skills.

(4) Use of individual and group projects relative to application of mathematical functions and skills.

B. Trends in Science Education

(1) A shift in emphasis from the products of study to the processes of thinking.

(2) Science can no longer be taught as answers to questions and problems, or as collecting information. Ways of thinking, methods or patterns of attacking problems, and processes of reaching solutions must be emphasized.

(3) Currently, a controversy exists between the use of laboratory experiences or demonstrational methods. Here the purposes and desired outcomes of the study situation must be considered. Demonstrational teaching obtains good results in the getting and understanding of information.

For skills and processes involved in science and problem-solving techniques, laboratory experiences appear to be essential.

(4) Increasing emphasis upon provision for the individual's interests so that the individual student may progress as far and as fast as his ability and interest permit.

III. Organization and Activities

A sequence and continuity of mathematical experiences is suggested so that all students may continue to make progress. This organization requires course offerings in at least a two-directional program:

(1) Students taking mathematics courses in order to fulfill graduation requirements.

(2) Students taking a mathematics program for college entrance and perhaps advanced study in mathematics or related fields.

Possible course offerings in mathematics need to consider both groups of students:

(1) Students required to take mathematics, but not continuing in the field would choose from:

Basic mathematics

General mathematics

Algebra I

(2) Students enrolled in college preparatory programs would choose from:

Algebra II

Geometry

Trigonometry

Any two of the following:

(a) Probability and statistics

(b) Analytical geometry

(c) Mathematical analysis

Organization in the field of science will include the following:

(1) Lecture, film, panel, demonstration, and other forms of group presentation.

(2) Group and individual laboratory experiences.

(3) Discussions, planning conferences, and other activities for small groups.

(4) Working with living plants and animals under scientifically controlled conditions.

(5) Experiences with preserved biological specimens and equipment, miscellaneous charts, diagrams, models, microscopes, and centralized science library.

(6) Use of periodicals, handbooks, charts, filmstrips, tapes, and other resource materials.

(7) Individual study in programmed materials and with teaching machines.

(8) Individual participation in science fairs, exhibits, and other project-type activities.

Suggested course offerings in the field of science include:

(1) Biological sciences:

General life science
Biology
Advanced biology
Advanced biology seminar

(2) Physical sciences:

General physical science

Chemistry

Electronics

Physics

Advanced physical science seminar

IV. Probable Courses Offered in Mathematics and Science in New Caney School District

A. Mathematics Department

Courses	Grade Level	Estimated Enrollment	Size of Classes	Number of Classes
Algebra I	9	60	30	2
Algebra II	10	60	30	2
Related Mathematics I	9	60	30	2
Related Mathematics II	10	60	30	2
Geometry (Plane and Solid)	11	60	30	2
Trigonometry (1/2 yr.)	12	30	30	1/2
Analytical Geometry or Statistics-Calculus	12	25	25	1-1/2
Totals		355		12

B. Science Department

Courses	Grade Level	Estimated Enrollment	Size of Classes	Number of Classes
Biology	9	120	30	4
Chemistry I	10	60	30	2
Chemistry II	11	20	25	1
Physics I	11	50	25	2
Physics II	12	20	25	1
Advanced Science	12	20	25	1
Totals		290		11

V. Space Requirements (Total 3 standard classrooms and 3 science lecture-laboratory classrooms.)

A. Mathematics Department will require:

(1) Three full-size classrooms of 30 pupil stations each.

(2) Three teacher stations.

(3) It is assumed that mathematics class enrollment will be somewhat larger than average; therefore, rooms of less than a minimum of 800 sq. ft. clear floor space each would not be practical for scheduling.

(4) Storage can be in free-standing cabinets for which additional floor space must be added.

(5) Orientation is for chalk-board work, demonstration, recitation, etc., but movable seating in rows would allow for needed flexibility.

(6) Consideration should be given to interchangeable use as 30-60 lecture rooms. (See Science below.)

B. Science Department will require:

(1) Three combination laboratory-recitation science classrooms, on the assumption of self-contained classroom instruction.

(2) Each room should have provision for the classes to engage in individual and small-group experimentation.

(3) Each room should have a specialized instructor's lecture and demonstration desk.

(4) Each room should contain flexible seating, so that students can convert from individual work to lecture and demonstration learning.

(5) Storage of science equipment and materials will require additional space (described below under items IX and X).

(6) Generally, laboratory-recitation science classrooms should be 1½ x the standard classroom size for an equivalent enrollment (about 1300 sq. ft. overall).

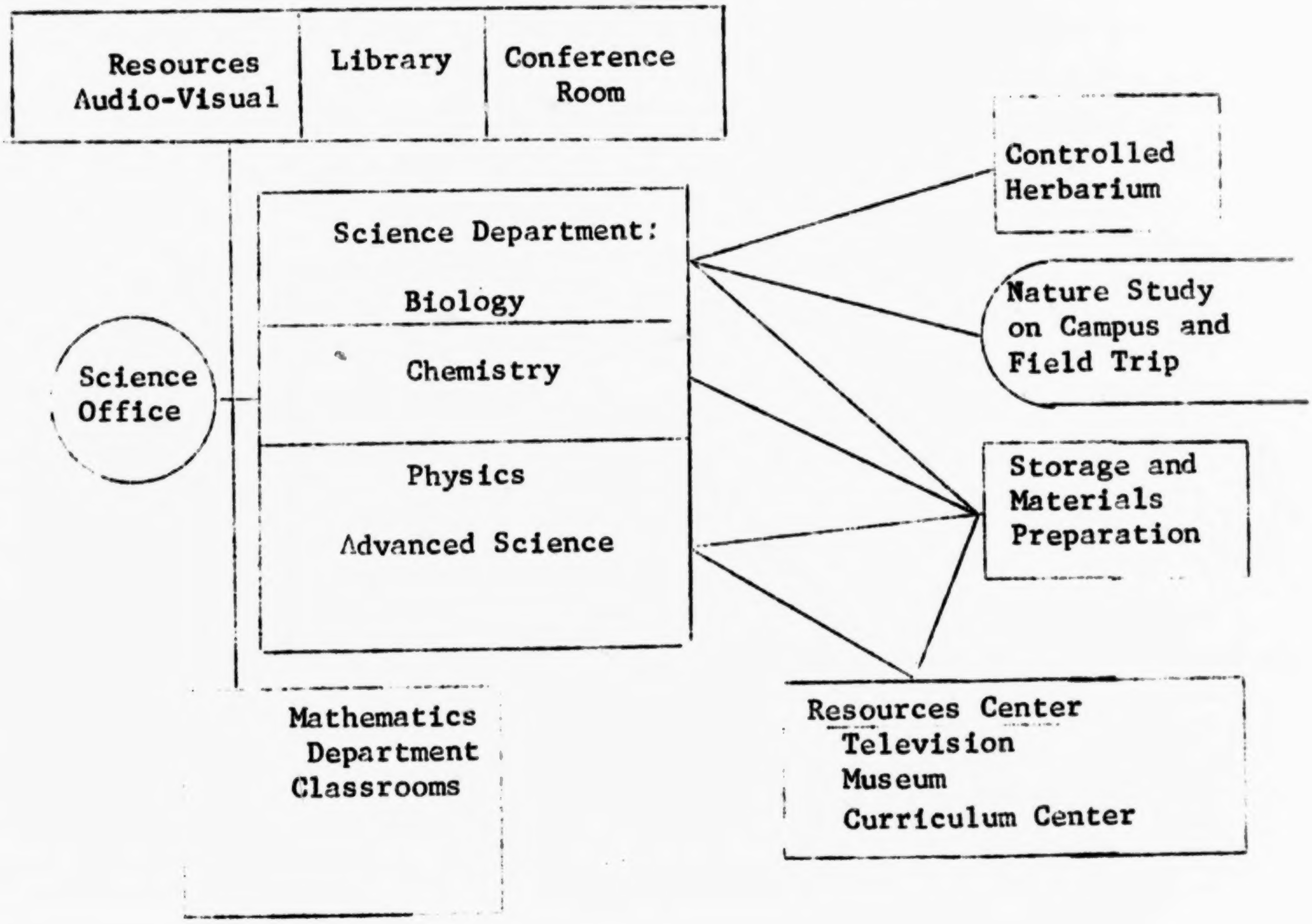
(7) Expansion of the science department enrollment to 3x or 4x initial capacity should be allowed for in the layout. Utilities must be designed for extension.

C. Supplemental Areas will require:

(1) A 500 sq. ft. life science herbarium, which usually can be constructed externally to the main building.

(2) An office for the science department chairman, which could also be used as a small seminar room for student groups.

VI. General Area Relationships of Mathematics-Science


Resources
Audio-Visual
Library
Conference
Room
Controlled
Herbarium
Science Department:
Biology
Chemistry
Physics
Advanced Science
Science
Office
Nature Study
on Campus and
Field Trip
Storage and
Materials
Preparation
Mathematics
Department
Classrooms
Resources Center
Television
Museum
Curriculum Center

VII. Internal Traffic

(1) The mathematics classes have internal traffic associated with use of chalkboard and regular classroom management.

(2) The science classes have considerable internal traffic associated with individual and group science experiements.

(3) The biology class should have a direct exit outside to its herbarium.

(4) Science classrooms should contain individual room science libraries (book shelves) for science reading and reference; the students also will have frequent library reference assignments in the main school library both during and after school hours.

(5) Television viewing should be provided for as well as exhibit space for charts, models, picture files, and film-strip showing.

(6) Groups of 60 students for science lectures may be expected in the future. This suggests that consideration be given for the provision of a lecture-demonstration hall having fixed seating on elevated platforms looking down onto the lecturer's demonstration desk.

VIII. Storage

(1) Free-standing cabinets (designed to specifications) and supply closets will serve the storage needs in mathematics.

(2) The mathematics teachers will use the main library audio-visual center and also the curriculum center in the school's proposed Resources Center.

(3) Science classes require a variety of storage:

- (a) Two separate preparation and materials storage rooms.
- (b) Individual pupil storage lockers.
- (c) Cabinet storage for flat materials and exhibits.
- (d) Demonstration desks.
- (e) Other specialized storage to be specified: e.g., chemicals, plants, tools, etc.

IX. Special Requirements

(1) Audio-visual (darkening, outlets, screens, etc.).

(2) Television.

(3) Physics and chemistry require approximately 8 sinks in student desks with acid-proof drain.

(4) All science classrooms require 30 pupil stations and teacher

stations; hot and cold water, acid-proof sinks, a.c. and d.c. (controlled) electric current, gas outlets.

(5) Biology class may have all utilities peripheral for work benches along the wall; chemistry and physics should tap two floor channels running lengthwise of expansible science suite for utilities.

(6) At least one fume hood.

X. Permanent Furnishings and Equipment (to be specified)

(1) Two-pupil tables in biology; with peripheral work bench.

(2) Chemistry and physics labs. should be interchangeable.

(3) Three teacher-demonstration desks.

XI. Alternative Use of Space

(1) The mathematics rooms are interchangeable.

(2) However, they could be arranged for team-teaching purposes, provided the wall spaces for chalkboard are adequate and the teacher's desk orientation is logical.

(3) There is no certain way to predict how many science rooms will be required eventually. The science suite should be interchangeable and expansible. (Note suggestion of floor utility channels, above.)

(4) A lecture-demonstration hall for 60 students is worth consideration as an alternative arrangement. (See reference above.)

PHYSICAL EDUCATION

Physical education is a required course for all students in the modern secondary school.

The physical education program is complex since it includes such varsity athletics as football, basketball, baseball, track, and minor sports. These athletics programs furnish entertainment for the community and traditionally have included school band, cheerleaders, student body, and the press. They often have independent income which pays officials, special entertainment, travel, team expenses, uniforms, and workers. The overhead cost of athletics, including physical plant, maintenance, and salaries, is generally borne by the school budget from tax support.

The physical education program also includes several related subjects: health, physical fitness, safety, and driver education. It should provide for intra-mural athletics. Thus, the total physical education program is a compound of required physical education courses and laboratory extensions. Often it operates as a 12-month program.

I. Purposes of the Department of Physical Education

The physical well-being and social adjustment of the American people have long been the concern of those involved in physical education in the schools. Such a concern has arisen out of the knowledge that physical fitness in a person relates to the group welfare as well as to individual social adjustment. Hence, the organization and purpose of the physical education department is to provide mental-motor activities for students.

These activities are designed to provide the necessary skills to facilitate physical fitness and social acceptance:

A. To afford opportunities for developing neuro-muscular skills and organic power through big muscles activities.

B. To develop proper habits, attitudes, and ideals toward healthful living.

C. To stimulate interest and joy in skills, sports, and other activities which are meaningful now and may be carried over into adult life.

D. To afford opportunities for exercising such desirable social traits as leadership, fellowship, and cooperation.

E. To create opportunities for exercising such character traits as fair play, courtesy, honesty, self-control, loyalty, truthfulness, and good sportsmanship.

II. Discernible Trends in Physical Education

A. Smaller class size.

B. There is a national trend toward required physical education five days a week on tenth, eleventh and twelfth grade levels, based on a recommendation of the President's Council on Physical Fitness, and on recommendation of the Conant Report on Secondary Education.

C. Use of films, film strips, and the overhead projector, especially in health sections.

III. Organization and Activities

The activities of the physical education program can be made to fit several different schedule treatments depending upon facilities available, and the time alloted. In a flexible schedule, classes could be scheduled in blocks of time meeting two or three times per week. Perhaps the more common practice is to meet one period per day with some periods specifically designed for gymnasium activities, classroom study, or driver education.

Driver education usually is a part of the tenth grade physical education program and also it may be offered in summer school. The physical education staff must be qualified to teach the required classroom portion of the driver education program.

Health courses can be staggered through the three-year program, or taught as an extended part of one year's activity.

Physical education is traditionally a field for team teaching - - instructors working as groups, directing, coaching, etc. The New Caney Secondary School will have a minimum of two men physical education instructors and one or two women instructors. The present bond issue does not include a stadium and will cover only partial costs of the new site development. Therefore, these specifications will be limited to the required physical education courses.

The football, baseball, and track programs will continue in the present stadium site until further funds are available. It is assumed that health and physical fitness will be taught as a part of the required physical education. Driver education may be taught during summer vacation.

One of the major objectives is citizenship and personality training. Pupils should enter and leave the physical education classes well-dressed and with proper attitudes toward the school program.

IV. Probable Courses Offered in Physical Education

Courses	Grade Level	Estimated Enrollment	Size of Classes	Number of Classes
Physical Education and Health	9-12	200 girls	60*	3
		200 boys	60*	4
Totals		400		7

*The classes will be taught by two teachers each.

V. Space Requirements for Physical Education

A. Dressing Rooms. When considering a total physical education program, the most important units are the dressing rooms for boys and for girls. Physical education is an activity course and proper clothing and sanitation is essential.

(1) Showers and the dressing area must accommodate a minimum of 60 boys and 60 girls in the short space of time allowed during the physical education period.

(2) Storage of uniforms and clothing must provide for a minimum of 250 boys and 250 girls (exclusive of varsity sports).

(3) The dressing rooms should be primarily oriented toward out-of-doors, since with groups of this size the out-of doors area is most adequate for large group activities. It is very important that the dressing rooms and shower facilities be expansible 2x or 3x in the future.

B. Gymnasium - Auditorium. The size of a basketball court plus folding bleachers on either side will largely determine the size of the space. This should allow two cross courts when the bleachers are folded up and provide for a variety of activities.

The stage at one end should be ample for Commencement Exercises School Assemblies, and Dramatics. The stage should have its own (a) dressing room, and (b) properties storage room. The stage should have separate entrance with large doors.

Other characteristics of the Gymnasium-Auditorium are:

(1) This plan provides a bare minimum of facilities within a very limited capital budget.

(2) It allows for indoors physical education classes and public entertainment.

(3) Bleachers should seat 1,500.

(4) Stage should be protected by a separation curtain.

C. Storerooms. A combination storage room of minimum 700 sq. ft. should be located accessible to the gymnasium, the out-of-doors, and the dressing rooms. Opening both to the gymnasium and to out-of-doors, this storage room should have double doors and ramps so that heavy apparatus, trucks, pianos, etc., can be moved. There should be flush floor sills so apparatus trucks can be run through the doors. In this room will be stored playground equipment, gymnasium apparatus, mats, uniforms of all kinds, piano, and trucks.

Other features of the above storage are:

(1) The space will be better utilized if bins, etc., are planned.

(2) Access to the out-of-doors playground should be direct.

(3) Specialized storage of 800 auditorium seats should be separately provided for, so that seating can be set up and stored on the average of once a week. (Under-stage storage is undesirable - a separate seating storage room is best.)

D. Offices. Two double offices for boys' and girls' instructors.

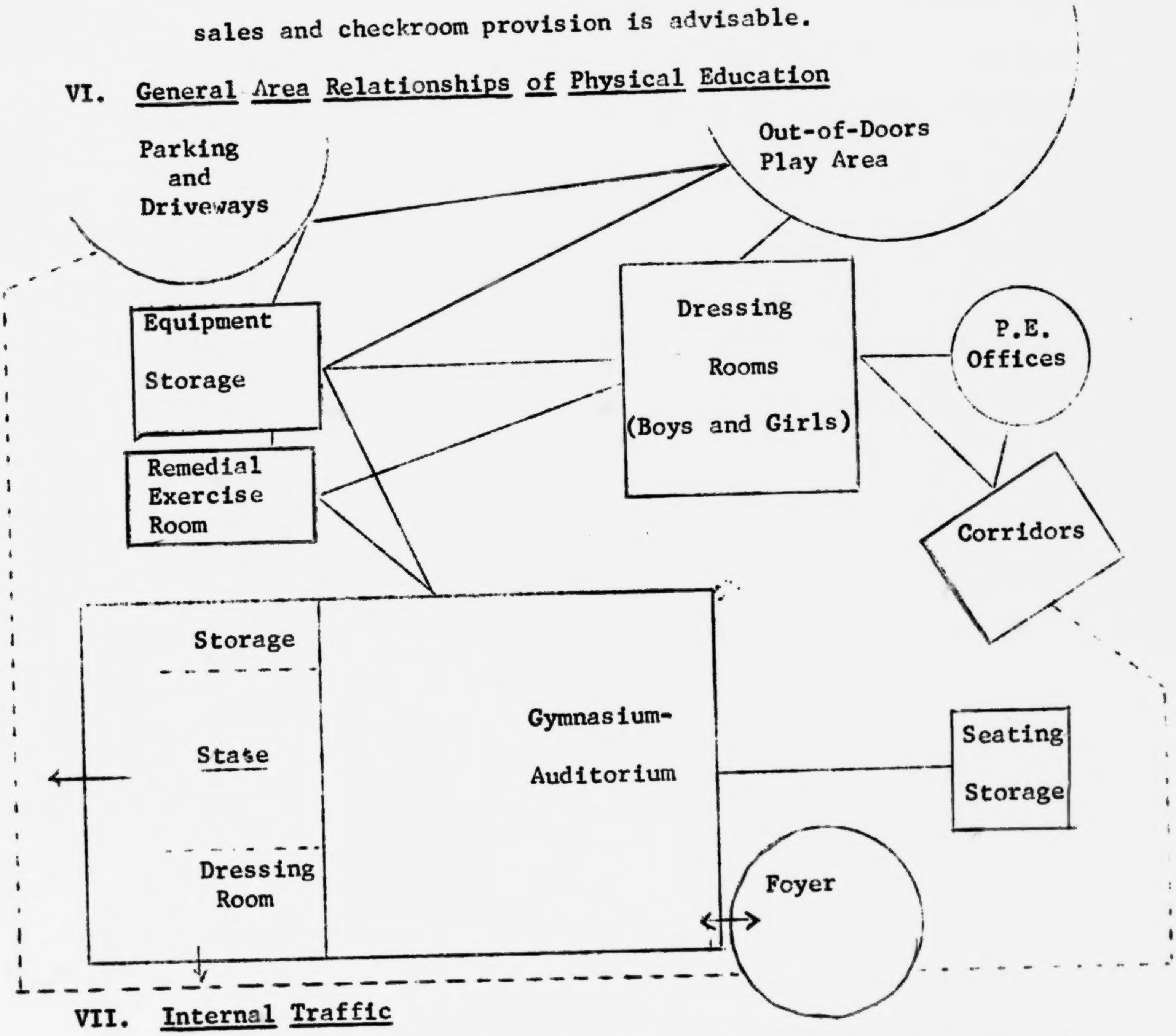
E. Health Classroom. Any of the regular adjacent classrooms could be used - capacity 30 to 40.

F. Remedial Exercise Room. A special room for exercise equipment will relieve the overcrowded gymnasium, provided supervision is available for the small groups.

G. Out-of-doors Area. A paved and sheltered out-of-doors area can be designed to handle 60 per cent of the physical education class activities. This alternate is worth careful consideration in the plot plan - although not essential to the immediate building specifications.

H. Foyer. As a major public reception facility, the entrance way to the auditorium-gymnasium should be adequate. It requires public men's and women's lavatories. Also a small ticket sales and checkroom provision is advisable.

VI. General Area Relationships of Physical Education


Parking and Driveways
Out-of-Doors Play Area
Equipment Storage
Dressing Rooms (Boys and Girls)
P.E. Offices
Remedial Exercise Room
Corridors
Storage
Stage
Gymnasium-Auditorium
Seating Storage
Dressing Room
Foyer

VII. Internal Traffic

(1) Foyer provides public entrance to gymnasium-auditorium and access to corridors.

(2) Refer to NCSC standards for emergency exits and safety provisions.

(3) Equipment storage relates to gymnasium and out-of-door playgrounds.

(4) Dressing rooms related to (a) out-of-doors playgrounds, (b) gymnasium, (c) stage, (d) remedial exercise rooms, (e) corridors.

(5) Offices relate to dressing rooms and corridors.

(6) Out-of-doors play areas should be separate from classroom location.

(7) Access and service driveways.

(8) Remedial exercise room supervised from gymnasium.

(9) Seating storage allows easy placement of auditorium seats.

(10) Stage accessible to outside service driveway for moving stage equipment.

(11) Bleachers folding and recessed in wall to allow clear and safe gymnasium play space for physical education classes.

(12) Team dressing rooms accessible for visiting athletics teams.

(13) Uniforms and equipment storage accessible to (a) dressing rooms, (b) offices, (c) gymnasium, (d) out-of-doors access driveways and playgrounds.

(14) Shower room separate from dressing room with good drying ventilation.

VIII. Storage

(1) In dressing rooms, storage for individual pupil gymnasium uniforms for 250 boys and 250 girls.

(2) In dressing rooms, storage for street clothes for 75 boys and 75 girls.

(3) In dressing rooms, storage for soiled laundry and for issuing clean laundry.

(4) The minimum 700 sq. ft. general storage room should have racks and bins (to be specified) and clear floor area for trucks.

(5) Stage equipment storage room has high ceiling and wide doorway to stage.

(6) Stage dressing rooms have small-properties storage.

(7) Ticket office and check room have built-in facilities (to be specified).

(8) Remedial exercise room apparatus require additional floor space for storage racks and cabinets.

(9) Under-stage storage should be avoided unless well-lighted, sanitary, accessible space is planned.

(10) Offices should have room for supply storage (to be specified).

(11) Auditorium seating storage should be provided in a separate locked area designed for the purpose where easily moved trucks can be stored.

(12) Custodian supply closet.

IV. Special Requirements

(1) All season supply of hot and cold water at regulated and controlled temperatures.

(2) Drinking fountains (cooled).

(3) Electrical control panel for stage and auditorium.

(4) Audio-visual projection outlets.

(5) Exit lights.

(6) Panic locks on doors, storage rooms, exits, etc.

(7) Public lavotories for men and women.

(8) Gymnasium has ample mechanical ventilation.

(9) Dressing rooms with drying ventilation.

(10) Laundry room (optional).

(11) Lavatories connected with boys' and girls' dressing rooms.

(12) Dressing table and mirrors the length of girls' dressing rooms.

(13) Ramps for moving trucks and heavy apparatus.

(14) Stage curtains (to be specified).

(15) Lavatory related to stage dressing room.

(16) Bleachers, when folded, recess into the gymnasium wall forming smooth wall surface for gymnasium activities.

(17) Natural lighting regulated to gymnasium activities.

(18) An aesthetic decor of auditorium, with maximum durability.

(19) Hardwood floor in gymnasium-auditorium and remedial exercise room.

(20) Soft wood floor (or equivalent) on stage.

(21) Drainage in dressing rooms and showers (terrazzo floors and wainscote suggested).

(22) Showers (NCSC standards as to number, type, quality).

(23) Electrical outlets for orchestra in front of stage.

(24) Proper acoustics in the auditorium.

X. Permanent Furnishings and Equipment

(1) Stage curtains (to be specified).

(2) Electrical control panel and system (to be specified).

(3) Folding bleachers (to be specified).

(4) Mirrors in dressing rooms.

(5) Gymnasium apparatus, including such permanent installations

as basketball backboards, floor and wall plates, and protective surfaces (to be specified).

(6) Storage bins (to be specified).

(7) Auditorium seating and trucks (to be specified).

(8) Out-of-doors playground installations (to be specified).

(9) Dressing room lockers (to be specified).

(10) Laundry (to be specified-optional).

(11) Furniture of offices (to be specified).

(12) Dressing room benches (to be specified).

(13) Stage furnishings: lecturn, public address system, etc. (to be specified).

(14) Television (optional). Rear outlets for projection equipment.

(15) Auditorium stage lighting (may all be of portable type if outlets and controls are accessible).

(16) Individual showers in girls' dressing rooms arranged for gang shower conversion.

XI. Alternative Utilization of Space

(1) The gymnasium-auditorium combination space will have temporary usefulness as an auditorium; but when the secondary school enrollment is eventually 2x or 3x the present planned capacity, a large separate auditorium will have to be constructed on the central site. At that time, the present stage of the combination gymnasium-auditorium can be abandoned; thus temporary or removable features ought to be considered in the present stage construction.

(2) Various alternative shapes and layout of the physical education unit should be studied.

(3) The dressing rooms should be expansible 2x, 3x, and 4x eventually without destroying access to out-of-doors playgrounds.

(4) Plans should allow for construction of a second large gymnasium at a future date.

(5) Auditorium seating should be erected or stored in 30 minutes or less, enabling the high school to have weekly assemblies, etc.

(6) Noon-hour and after-school usage of the gymnasium will be common practice.

(7) Driver education and recreation programs in summer suggest need for zoned arrangement (separate air conditioning control).

(8) The cafeteria will accommodate much of the speech, debate, and drama, but large audiences will have to use the gymnasium-auditorium.

(9) Out-of-doors parking should be related.

(10) Driveways and outside lighting should be related.

(11) Visiting teams require dressing rooms.

PRACTICAL ARTS

Practical arts provides a two-year technical program for boys who are preparing to enter occupations and trades directly or soon after completing secondary school. For girls it may be a two-or three-year preparation in homemaking. Considering the demand for technical training in all occupations, we may assume that a third of the high school boys will pursue at least a two-year technical program in secondary school. Others will elect technical courses for personal advantage. Among the girls, a large majority may elect home economics and possibly half the enrollment pursue advanced homemaking. Agriculture may afford many desired programs for boys; other courses of a related type would be mechanical drawing, electronics, power mechanics, and welding-metal-machine work.

In providing space for technical courses, a low-cost type of expansible permanent structure is indicated. It is impossible to predict far in advance the titles and content of practical arts courses that the boys will require. It is also difficult to estimate how many will enroll. The program will be limited by teachers' skills, equipment provided, and the practicability of advance planning as to market demands and individual pupil interests.

Recognizing this necessity of flexibility, however, certain general features of the practical arts unit can be decided. The unit will require more space for machinery and bench work than academic pupil stations; the size of classes and pupil-teacher ratio will be 1/20 or 1/15; and even though the exact curriculum may not be continuous, the general utility and space requirements are fairly constant.

For the boys, some courses will be elective, generally in 60-minute periods. Advanced technical courses may take two- or three-hour periods. These facilities may be operated twelve months in the year, daytime and evenings. Adult courses may use the facilities. The agriculture plant layout is well established by the profession (refer to Texas Education Agency bulletin). The new technical fields can occupy practically the same layout.

The girls' homemaking suite is also well-established by the profession (refer to Texas Education Agency bulletin). However, the number of teacher stations may increase 2x, 3x, or 4x, making necessary in the plans an allowance for future extension of spaces and utilities for homemaking.

I. Purposes of the Departments of Practical Arts

A. Practical Arts for Boys (and Girls)

Industrial Arts is an integral part of the educational program. It must be accepted that all education contributes to success in the world of work; therefore, industrial education cannot be separated from, or made an appendage to, the secondary school in general.

The industrial education program and facilities must be designed to meet the needs of all students. Selection processes which make vocational programs and facilities available only to the best pupils, or which relegate only the poorest pupils to the program, cannot be defended.

With the above in mind, the industrial education facilities should be so planned and designed as to make it possible to carry on a program in keeping with the needs of the individual students and the community in which they reside.

Among the major objectives of practical arts are:

(1) To develop in each student an appreciation of good design and workmanship, and the ability to select, to care for, and to use industrial products wisely.

(2) To develop in each student a feeling of pride in his ability to do useful things and to develop worthy leisure-time interests.

(3) To develop in each student the habit of orderly, complete, and efficientperformance of any task.

(4) To develop in each student an understanding of drawings and the ability to express ideas by means of drawings.

(5) To develop in each student a measure of skill in the use and care of common tools and machines and an understanding of the problems involved in common types of construction and repair.

(6) To master fundamentals that will enable the student to enter and to adapt himself to changes over a period of time in a field of industry.

(7) To enter cooperatively into technical training programs, with the school supplying the training it can best provide and industry supplying training.

B. Home Economics for Girls (and Boys)

The general educational outcomes of homemaking education are the same as for all education: to aid youth to develop their powers, abilities, interests, and ideals, and to use them for the welfare of themselves and others.

Specific purposes in home economics education are as follows:

(1) Selection, care, renovation, and construction of clothing.

(2) Selection, preparation, serving, and conservation of food.

(3) Selection, use, and care of home equipment.

(4) Development of creative, social, managerial, and manipulative skills.

(5) Consumer and other economic aspects of personal and family living.

(6) Correlation of the knowledge gained in other fields such as science and art with homemaking.

(7) Recognition of the significance of full-time homemaking as a career in our society.

(8) Assistance for individuals in finding vocational opportunities.

(9) Acquisition of understandings in home management and child care.

II. Discernible Trends in Practical Arts

A. Practical Arts for Boys

(1) Practical arts curriculum is changing so that it is more closely geared to the technology of the era.

(2) Several kinds of industrial arts programs are being developed to appeal to students of all abilities.

(3) Design in its broadest sense is being emphasized.

(4) Applied science and mathematics is being emphasized in every situation in which a natural and practical application can be made.

(5) Greater emphasis is being placed on the use of oral and written language and technical vocabulary, as it applies to each subject area.

(6) Practical arts is being organized cooperatively with industry.

(7) Practical arts in secondary school may provide fundamentals for advanced technical training later on.

(8) Practical arts leads to employment in industry.

B. Home Economics Department

(1) Trends in the homemaking program show concern for those areas dealing with family living, in addition to manual

skills and experience in sewing and cooking.

(2) The recent phenomenon of home owernship as the rule, rather than the exception, has made consideration of the home and its furnishings increasingly important.

(3) The increased trend toward younger marriages and larger families, coupled with the high divorce rate, has proved the need for more education in the area of family relationships.

(4) The changes in eating and living patterns and habits, caused in part by the increased number of working wives, have altered the emphasis of the foods and clothing programs.

(5) Some programs are including expansion to permit aspects of homemaking and family life for boys and home management and family finance for girls.

(6) Practical training in child care, home nursing, home decoration, and other skills of the modern family are stressed more than vocational training.

(7) Modern home economics is related closely to the academic preparation so that it prepares girls for college also.

III. Organization and Activities

A. The organization and arrangement of Practical Arts shops must be such that a great variety of activities may take place. Many of the variety of necessary activities must be going on at the same time, often during the same period.

Some of these activities, involving the teaching of large and small groups of students, are: (1) Demonstrations;

(2) Lectures; (3) Study and research, individuals or groups; (4) Drawing, planning, and designing, individuals or groups; (5) Testing; (6) Observation of visual aids; (7) Construction of practical arts projects.

The courses available in an industrial arts program usually include: Wood Shop; Metal Shop; Drafting; Mechanics. The number of courses provided in these areas will vary greatly with the changing demands of the community and the needs and interests of individual students.

B. Home Economics activities will be of the individual, small group, or large group type. All types will involve:

(1) Foods: planning, preparing, serving and clean-up.

(2) Clothing: planning, layout-out, cutting, sewing, fitting, and grooming.

(3) Laundry: washing, drying, ironing, and care of clothing.

(4) Grooming.

(5) Discussion and demonstration of family living and dining, home care of the sick, child care and development, foods and nutrition.

It is expected that each student will have opportunity to experience all the above activities in the course of a total homemaking sequence. Scheduling can be such that groups of students can be working simultaneously within the department.

IV. Probable Courses Offered in Practical Arts in New Caney School District

Courses	Grade Level	Estimated Enrollment	Size of Classes	Number of Classes
Home Economics	9	40	25	2
Homemaking	10	20	20	1
Homemaking	11	15	20	1
Homemaking	12	15	20	1
Totals		90		5
Industrial Arts	9	40	20	2
Agriculture	10	15	20	3
Agriculture	11	10	20	
Agriculture	12	10	20	
Electronics	12	20	20	2
Power machines	12	10	20	
Welding-Metal-Machine	11	10	20	
Mechanical Drawing	10	30	30	1
Totals		145		8

V. Space Requirements (Total equivalent of six standard classrooms)

A. Homemaking. Initially this department can be handled by one teacher. The minimum space for the beginning homemaking suite should be 1,800 sq. ft. or the equivalent of two standard classrooms.

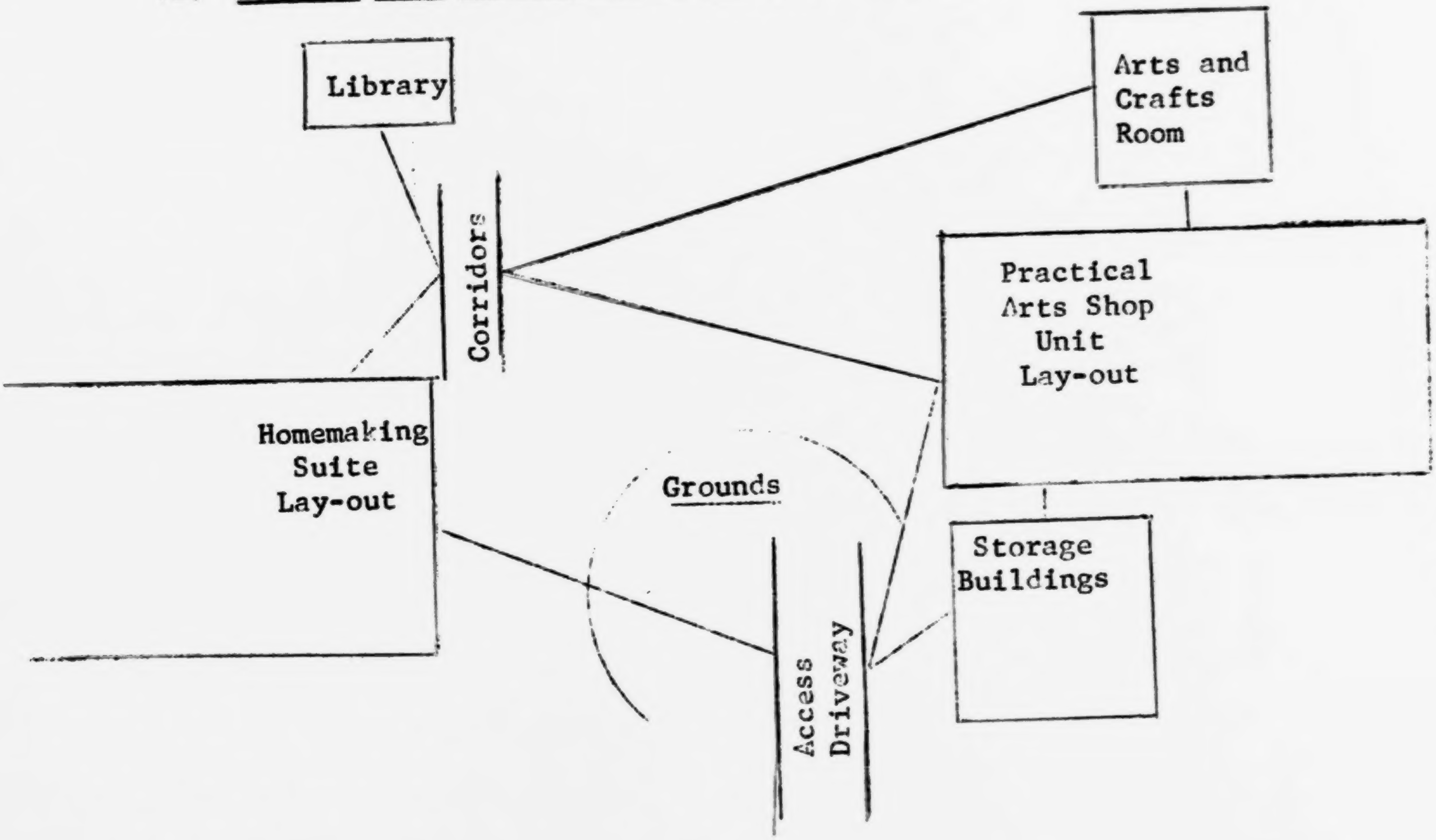
B. Shop. A flexible arrangement of the equivalent of four standard classrooms (approx. 3,600 sq. ft.) with utilities for free-standing machinery. Removable partitions will provide for space separation into such enclosures as (a) offices, (b) storage of supplies, (c) tools and stockroom, (d) electronics laboratory, (e) power machinery, (f) paint room, (g) lecture room, (h) custodial storage, (i) foyer and exhibits, (j) lavatory, showers, and lockers.

C. Mechanical Drawing. Share the arts and crafts room specified below, one period a day.

D. Supplementary Areas. The practical arts rooms are self-contained units. They should have access to service driveways and such use of grounds as gardens, machinery storage, automotive garages, etc.

E. Spaces shall have over-all unit air conditioning and ventilation.

VI. General Area Relationships for Practical Arts


Library
Arts and Crafts Room
Corridors
Practical Arts Shop Unit Lay-out
Homemaking Suite Lay-out
Grounds
Storage Buildings
Access Driveway

VII. Internal Traffic

(1) Layout of internal traffic of the homemaking suite is well-established (refer to Texas Education Agency bulletin). The main centers are food preparation stations, food storage, food service, living area, bedroom and bathroom, child care, storage. Provision is integrated for clothing stations.

(2) All centers in the homemaking suite must be supervisable by the teacher.

(3) The established agriculture layout should be modified to accept electronics laboratory, more metal and wood-working machinery, more power machinery, more types of storage, more separate automotive storage on the grounds, and special enclosures for painting, ceramics, crafts, tool benches, etc.

(4) An arts and crafts unit (for mechanical drawing, etc.) will be related and make common use of foyer and exhibit areas.

(5) Practical arts shop should be on first floor with adequate ceiling heights for lengths of lumber, power machinery, etc.

(6) Homemaking is preferably on first floor.

(7) Driveway access is essential.

(8) Location of shop should allow complete noise separation from academic classes.

(9) Planning for 12-month and evening usage includes parking, separate access, outside lights, security control of locked doors, zoned ventilation, etc.

(10) Initially the shop should provide for two teacher stations, having separation of the classes; later it will need to be expanded in area possibly 2x, 3x, or 4x.

VIII. Storage

A. Homemaking. Free-standing storage for individual pupil materials, food storage, clothing storage, furniture storage, project storage. However, a supplies storage room is also very useful and flexible.

B. Shop. Storage dimensions to be specified for materials such as lumber, metals, tools, and equipment. The storage should be flexible, with movable partitions, as future needs can not be determined.

C. Custodial closets.

D. Grounds storage (to be added as needed).

E. Free-standing cabinet storage (to be specified).

IX. Special Requirements

(1) 110 volt a.c. and 220 volt a.c. power.

(2) Gas outlets.

(3) Decor in homemaking suite.

(4) Provision for movable partitions in shop.

(5) Drinking fountains (cooled).

(6) Hot and cold water to sinks and lavatories. (Shower in shop office.)

(7) Automotive ramp.

(8) Automotive repair dock.

(9) Electrical outlets from floor channels and peripheral.

(10) Generally high level of illumination (80 ft. candle, if windowless).

X. Permanent Furnishings and Equipment

(1) Homemaking equipment (to be specified).

(2) Cabinet design (to be specified).

(3) Mirrors, chalkboards, bulletin boards.

(4) Power machinery (to be specified).

(5) Electronics laboratory benches (to be specified).

(6) Office furnishings (to be specified).

(7) Shelving for room libraries (to be specified).

(8) Thirty pupil-station mechanical drawing desks.

(9) Other pupil station furniture (to be specified).

XI. Alternative Utilization of Spaces

(1) Adult groups may be accomodated in homemaking center.

(2) Shop will operate more than regular school hours.

(3) Shop unit may expand in area 3x or 4x in future as the enrollments increase.

(4) The mechanical drawing desks will serve the needs of the arts and crafts classes.

(5) Arts and crafts classes may use the shop-work benches, kiln, outlets for electrical tools, etc.

(6) Foyer (assuming 12-month and evening programs) should give public access to (a) practical arts unit, (b) arts and crafts, (c) music center, (d) homemaking center. This calls for zoned planning, public access and parking, outside lights, air-conditioning controls, exhibits, public lavatories, student lavatories, security of exits, and planning for expansion.

(7) Low-cost permanent construction with minimum weight-bearing partitions would be justified to allow interchangeable long-range use of practical arts space.

FINE ARTS

The importance of fine arts in the cultural growth of children should not be neglected. This field is usually defined as art and music, but other learning activities may be included. The fields of art and music are elective. In practice, they require different types of school plant facility that have little in common and can be separated in building plans. The common bond is that both may attract 12-month operation and both have a service relationship to other school activities, including extra-curricular programs.

The fine arts courses require specialized rooms. For initial enrollment, one arts and crafts room and teacher station should be provided. The music department may need a space for chorus and another for instrumental music.

I. Purposes of the Fine Arts Program

A. Arts and Crafts Department

The arts center should be one of the focal points of the secondary school plant. To enable all students to gain an appreciation of the values of aesthetic experience, the expressive arts should be a required area of study and activity for every high school student. In our contemporary society, where so much emphasis is placed upon the real and the material things, more stress ought to be placed upon the development and activities of the fine arts.

Increased skills in the techniques of artistic expression enables the artist to communicate to others in a language built upon shared experiences and emotions. The program should provide learning experiences that motivate each student to make his own unique responses to original expressions derived from his own concepts. Also, countless facets of school life depend upon this communicative medium and provide opportunities for the integration of art with other curricular departments and school activities.

Among the specific purposes of an arts and crafts program are the following:

(1) Through participation in art programs, to develop in students a deeper understanding and appreciation of the various ways art has been used for communication and expression by man.

(2) To provide experiences that will help students, who are not sure of their goals or needs, to discover the possibilities that art possesses as a means of giving a sense of enjoyment and direction to their lives.

(3) To develop skills of students in fine arts and crafts that will carry on into other educational subjects, their homes, and industry.

(4) To provide experiences for students in as many different mediums as possible and especially to encourage experimentation in both crafts and fine arts materials.

(5) To help develop talented students who show high aptitude and interest in art and who wish to prepare for the art teaching profession or to become commercial artists.

(6) To involve the public and make them aware of the field of arts and crafts and its possibilities, thus making art a

community-wide concern.

B. Music Department

Music is becoming increasingly important as a form of self-expression, rather than formal instruction. With the advent of increased leisure time, music will assume a significant role in the social life of succeeding generations.

Performance should not be the primary objective of applied music group activity although a high level of performance is important. Conceptual learning of harmony, form, style, notation symbols, development of motor abilities, and genuine appreciation, should precede such activity. Performance should be a culminating activity not a prime objective.

Provision ought to be made so that subject and skills to be mastered by the student can be geared to the unique capabilities and interests of the individual to the extent that practicality will allow.

Among the specific objectives of music education are the following:

(1) To administer to the moral, spiritual, and aesthetic needs of the student.

(2) To encourage a knowledge and appreciation of the literature of marching and concert band, orchestra and string orchestra, choir, glee clubs, and related vocal, wind, and brass ensembles.

(3) To help the student acquire basic knowledge of theory, harmony, and the various stages of music development.

(4) To allow opportunity for the student to progress continuoutly at his own optimum rate.

(5) To provide the student with quality instruction so that he receives the genuine values inherent in music study rather than the false values which result from unskilled, uninspired, showcase type instruction.

II. Discernible Trends in the Fine Arts

A. Trends in Arts and Crafts

(1) An increased need for and interest in the public school art education field seems to be developing.

(2) Increased leisure time and increased pressure from modern living is bringing greater awareness of the need for relaxing and for the creative values that the art field offers.

(3) Use of audio-visual teaching aids in art teaching is increasing.

(4) Flexibility of structure; laboratory equipment and furniture are being designed for a variety of activities and arrangements.

(5) Closer integration of arts and crafts with practical arts.

B. Music Education Trends

(1) Increasing attention to more efficient use of time and staff by utilizing the possibilities of team teaching and variable groupings of students in music education.

(2) Careful scheduling of major instrumental and choral groups to permit large group instruction, or sub-group rehearsals, as the need arises.

(3) Increased opportunity for students to participate in a greater variety of music activities.

(4) Provision of a separate facility for music instruction (often a separate building).

III. Organization and Activities

Many activities may be carried on by the arts and crafts department. The two-dimensional activities usually include:

(1)

- Drawing and painting
- Color and design
- Illustration
- Figure drawing

(2)

- Lettering
- Interior decoration
- Art service activities (posters, banners, printing production)

Activities of the music department generally include:

(a) Instrumental
  - Concert band
  - Orchestra
  - String orchestra
  - Marching band

(b) Vocal
  - Girls' glee club
  - Boys' glee club

(c) Small Groups
  - Dance band
  - Instrumental ensemble
  - Vocal ensemble
  - Solo performance

(d) Classroom Activities
  - Music appreciation
  - Music theory

IV. Probable Courses Offered in Fine Arts in New Caney School District

Courses	Grade Level	Estimated Enrollment	Size of Classes	Number of Classes
Art Education	9-10	75	30	3
Art Education	10-11	25	30	1
Totals		100		4
Instrumental Music	4 yrs.	80	6 to 80	5 periods
Choral Muisc	3 yrs.	50	50	2 periods
Totals		130		7

V. Space Requirements (Total 3-1/2 room equivalent)

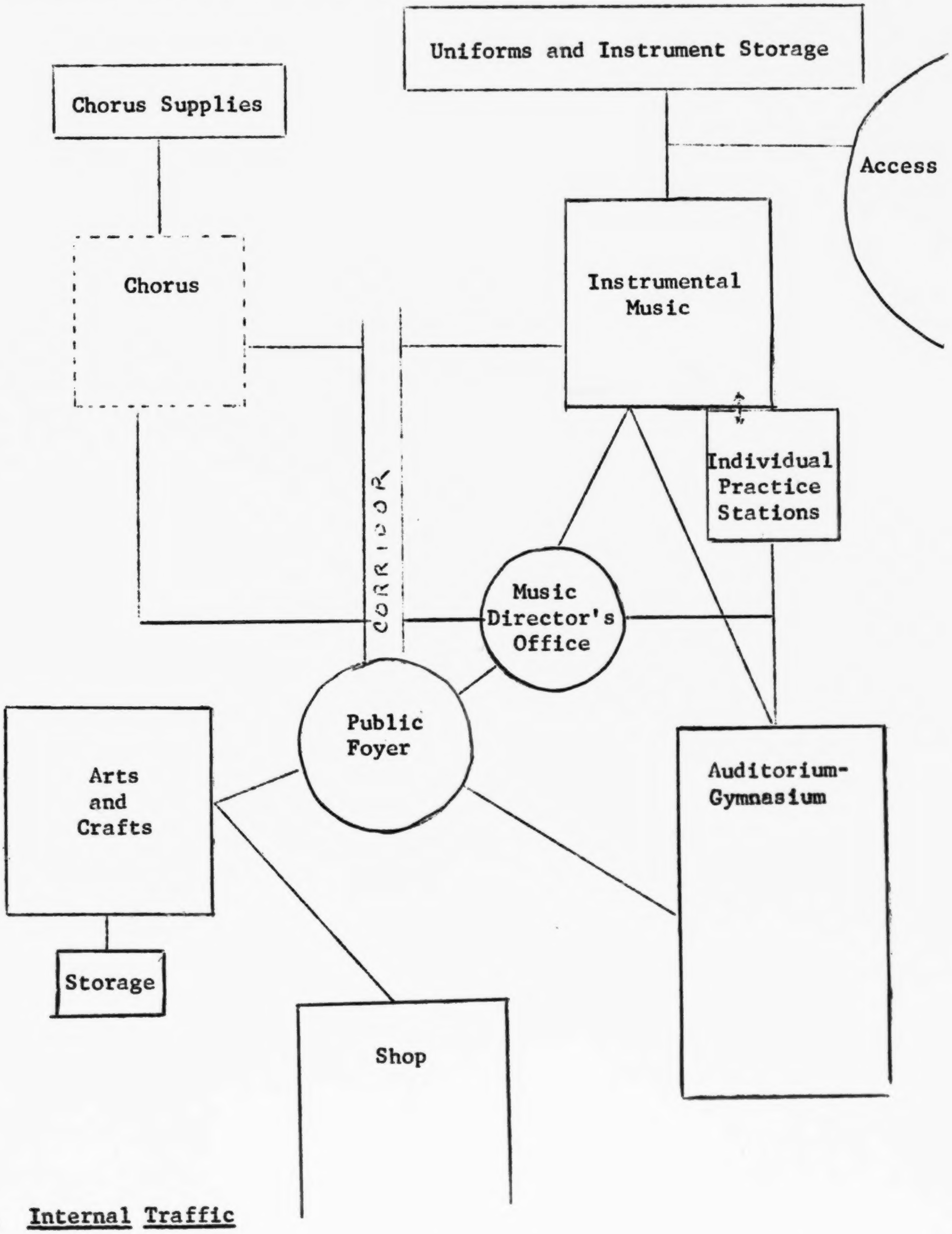
A. Art Education. A room somewhat larger than a standard classroom is needed (suggested 1000 sq. ft.). This would include space for considerable storage in specially designed freestanding cabinets.

B. Instrumental Music. A unit should be planned to accomodate (a) 80-student band, (b) eight practice cubicles, (c) uniform and instrument storage, (d) supply storage. A separate music building should be considered.

C. Choral Music. Space for a 50-pupil chorus should be provided in the total building design: for example, a zoned area of the cafeteria. Access to storage of gowns and supplies. Acoustical quality is important, as well as noise separation from academic classes.

D. Supplementary Areas. A music director's office is required for proper administration.

VI. General Area Relationships of the Fine Arts


Uniforms and Instrument Storage
Chorus Supplies
Access
Chorus
Instrumental Music
Individual Practice Stations
CORRIDOR
Music Director's Office
Public Foyer
Arts and Crafts
Auditorium-Gymnasium
Storage
Shop

VII. Internal Traffic

(1) Music instruments are carried to the gymnasium-auditorium and also outdoors to bus loading.

(2) The band and chorus often use the building after school, at night, on week-ends, and all seasons of the year.

(3) Chorus may have a practice room at any planned location, but they require access to gown and supply storage. Raised platforms are commonly used in practice.

(4) Band and orchestra unit should be self-contained. This includes traffic to uniform and instrument storage, to practice cubicles, etc.

(5) Instrumental music groups may prefer a raised dias; the rehearsals are oriented to the music director's station.

(6) Arts and crafts classes have informal groupings within the classroom; also, they will work with the practical arts shop.

VIII. Storage

(1) Music department storage is contained within the unit plant (to be specified).

(2) Arts and crafts storage may be in free-standing cabinets (to be specified).

(3) Music director's office should have a supply closet.

IX. Special Requirements

(1) Sink, hot and cold water, and work bench in the arts and crafts room.

(2) Acoustical treatment of music units (e.g., carpeted floors); special ceiling heights for music group practice.

(3) Drinking fountains (cooled). Lavatories accessible.

(4) Air-conditioned music unit that will trap and separate noise from academic classes. Or, a separate air-conditioned

building may be planned.

(5) Electrical outlets peripheral at frequent intervals, in arts and crafts room and band practice room.

(6) Arts and crafts room should have a lecture chalkboard; but all the wall spaces should be capable of display of art work (soft wood walls, for example).

X. Permanent Furnishings and Equipment

(1) Cabinet work (to be specified).

(2) Special furniture (to be specified).

(3) Office furnishings (to be specified).

(4) Art instructor's desk.

XI. Alternative Utilization of Spaces

(1) Arts and crafts room will accomodate mechanical drawing.

(2) Chorus and instrumental music may be scheduled in the same music unit, or at least share the same storage facilities for uniforms and supplies.

BUSINESS EDUCATION

The curriculum of business education will change with the demands of trade and industry. More use of business machines and more modern types of equipment are obviously the trend. For immediate planning, a two-unit business classroom area with related spaces will serve the major purposes of a two teacher-station department.

Laboratory aspects include business office experience and work experience. The business education students and staff perform services for other student enterprises; e.g., reproduction of publications, advertising materials, student's accounts. The business students also may gain practical business experiences in the various school offices.

I. Purposes of Business Education

The department of business education exists and operates on the basis of several broad general concepts. Our American system of free enterprise is dependent upon a citizenery possessing a high degree of economic understanding. The cultural, social, and political development of our country is dependent upon a healthy, intelligently managed economic climate. All of our citizens should become effective producers and consumers of economic goods and services.

To insure the continued growth and development of the implications of these concepts, students at the secondary school level must receive some formal education in the area of business.

The business education department is designed to serve student needs in three general categories:

(1) Students who are college bound and desire business skills for personal use.

(2) Students who are actively pursuing vocational interests in various fields of business.

(3) The need of all students for some general knowledge and understanding of basic concepts, services, and functions of business in everyday living.

In serving such student needs, several general objectives come into focus:

(1) To help students learn to deal effectively with personal problems relating to business.

(2) To help students gain an understanding and appreciation of our

economic system and to develop economic literacy.

(3) To help students develop ability to plan an intelligent choice of business occupation.

(4) To help students become intelligent consumers of goods and services.

(5) To help students develop vocational concepts, attitudes, habits, and skills which will enable them to obtain initial employment and continued advancement in areas of business endeavor.

II. Discernible Trends in Business Education

(1) A better utilization of the professional staff through such activities as: clerical assistance, team teaching, and flexible scheduling of classes with respect to number of sessions and amount of time permitted per session.

(2) Upgrading of instruction in the development of skills and work habits of students.

(3) Recognition of and provision for courses in the areas of business for individual use in non-vocational situations.

(4) Complete electrification of business machines.

(5) Continuous revision of curriculum and instructional methods to match trends in business and regional development.

III. Organization and Activities of Business Department

(1) The organization and activities of the business department should be such as to assure students the gaining of basic skills according to their own interests and abilities.

(2) At the same time the opportunity should be available for students to develop advanced skills according to their own interests and abilities.

(3) Provision should be made for large group instruction through activities such as audio-visual aids, lectures, and television.

IV. Probable Courses Offered in Business Education in New Caney School District

Courses	Grade Level	Estimated Enrollment	Size of Classes	Number of Classes
Typing I	9	40	40	1
Typing II	10	30	40	1
Shorthand I	10	30	40	1
Shorthand II	11	20	40	1
Bookkeeping	10	20	30	1
Business Law	12	20	30	1
Business Management	11	20	30	1
Business Machines	12	30	30	1
Totals		210		8

V. Space Requirements (Total equivalent of 2-1/2 classrooms.)

A. Typing and Shorthand Room. Large classes with as many as 40 pupils may be accommodated. This requires a full size room (minimum 900 sq. ft.) with dual purpose desks and compact storage cabinets. Part of the day it will serve as a general business classroom.

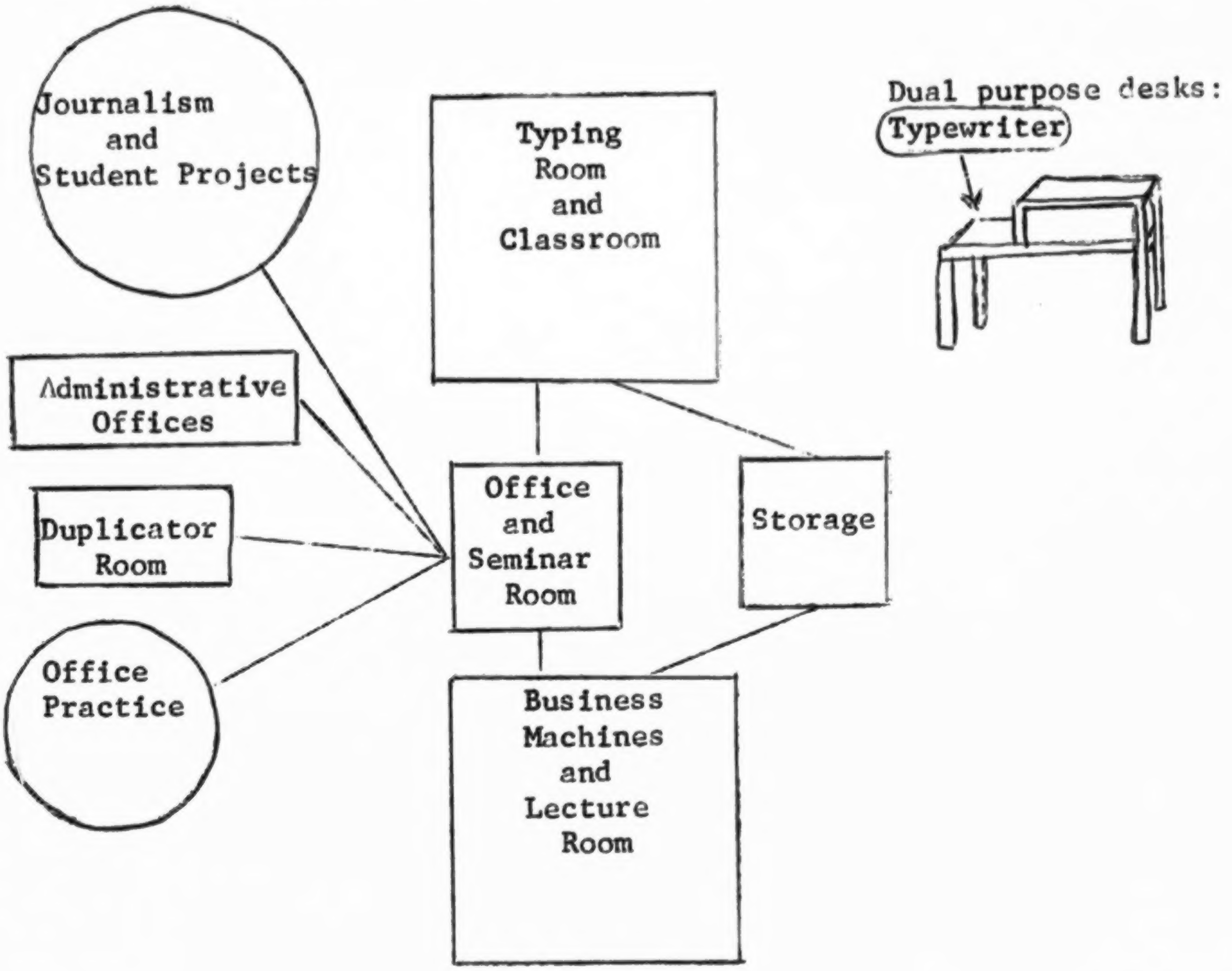
B. Business Machines Room. A multi-purpose room accommodating 30 pupil stations. This room should have area for a vareity of business machines and also for lecture groups.

C. Office and Seminar Room. The seminar room located between the two classrooms should accommodate 15-20 persons at a conference table, besides the business instructor's office furnishings.

D. Supplementary Areas. A small mimeograph and production room would be a useful adjunct, serving both instructional purposes and the production needs of the high school, including that of the principal's office.

E. An adequate supply storage room for business education would be very desirable.

VI. General Area Relationships in Business Education


Journalism and Student Projects
Typing Room and Classroom
Dual purpose desks:
Typewriter
Administrative Offices
Office and Seminar Room
Storage
Duplicator Room
Office Practice
Business Machines and Lecture Room

VII. Internal Traffic

(1) Basically two teacher-stations are required, plus a seminar room which will serve both internal and external relationships of the department.

(2) One teacher-station will be for instruction with a lecture-recitation orientation; this room will serve for typing, shorthand, and business law classes. The circulation will be mainly for teacher supervision, distribution of materials and exhibits.

(3) The other teacher-station will be a multi-oriented business machines room, the arrangement and contents of which can not be entirely predicted. This room will serve groups of pupils working on related projects and also larger classes such as bookkeeping where the work is partly on machines and partly at a desk.

(4) The trend will be toward all electrical business machine equipment.

(5) Both teacher stations should have access to the (a) business seminar room, (b) storage room, (c) corridors.

(6) Business department office should have an entrance from the corridor as it relates to service functions for the rest of the high school.

(7) Student groups will operate duplicating equipment, which should be located in an accessible separate space.

VIII. Storage

(1) The storeroom is for stock and for projects. It should have a work bench, hot and cold running water, and electrical outlets. It may need to accommodate photocopy machines, duplicator machines, and a work bench to prepare audio-visual materials.

(2) Shelving and closets should be specified for charts, drawing supplies, duplicator supplies, and books and magazines.

(3) Bookcases in the seminar room (to be specified).

(4) Space for metal storage cabinets and letter file cabinets in both the classrooms.

(5) Unused equipment can be stored in the stockroom.

IX. Special Requirements

(1) Ample electrical outlets should be provided: e.g., for electric typewriters.

(2) High level of illumination is required.

(3) Hand washing facilities should be accessible.

(4) Glass partitions for over-all supervision.

X. Permanent Furnishings and Equipment

(1) Split level desks for the typewriters (no moving or hinged parts of the desk). Thus, the multi-purpose desks may take more floor space but will not require special maintenance.

(2) Business machines (to be specified).

(3) Tables for business machines (to be specified).

(4) Chairs for machine operation (to be specified).

(5) Duplicating equipment (to be specified).

(6) Seminar-office to have a conference table and also two work desks.

(7) Cabinets and files (to be specified).

(8) Teachine machines (to be specified).

XI. Alternative Utilization of Space

(1) According to estimates, this will be a minimum departmental plan and there will be no idle periods.

(2) Many student groups will utilize the facilities.

(3) The business department, for example, will handle financial bookkeeping of student activities and will assist the

journalism groups.

(4) Student activities will occupy the seminar-office room a substantial part of the time.

ELEMENTARY DEPARTMENT

Modernization of the existing Elementary Department facilities is outside the scope of this report, since provision is not made in the bond issue for this purpose.

However, a brief overview of the work that lies ahead should be made. It is assumed that the present high school building could accommodate the curriculum and activities of Intermediate Grades 7-8 during the next five years. Alternatively it could house the senior high school for three years. This will depend upon which secondary school grades are moved temporarily to the new central site plant.

The elementary grades are currently housed on the original site in a plant that has considerably deteriorated. The various wooden buildings can be considered only as substandard. They may be continued in use only on an emergency basis.

The main elementary school building requires extensive renovation (to be specified).

It is good elementary school practice to have an adequate elementary school library. Space for this should be planned.

Also, each classroom should have built-in shelving for approximately 400 volumes per room.

Storage now is poorly planned; yet it is important. Room storage cabinets should be built (to be specified).

Modern illumination and decor would greatly improve the present building. The grounds need to be landscaped; playgrounds and parking areas should be zoned.

The elementary school gymnasium will continue to serve very well in the future as an elementary multipurpose room.

In the near future, a new elementary school unit will have to be built in the Porter area. At this time both elementary school plants may be air conditioned.

The elementary school administrative office and health clinic should be made more adequate.

Consideration should be given to space for special education classes.

ADMINISTRATION

In growing school districts, and with changing programs, the spaces needed for administration will necessarily change in the course of time. Planning for administrative space, therefore, needs to be flexible and expansible. Generally, each administrative position that develops in the table of organization requires an office, plus space for one or more secretary-clerks, public entrance, storage, and possibly some special equipment.

Besides the usual line offices there are a number of staff personnel who require office accommodations; guidance counselors, school nurses, physical education director, head custodian, cafeteria director, librarian, special subject supervisors, etc. Provision has been indicated in the educational specifications above for the offices of department chairmen, as needed, since these office spaces usually are in combination with instructional activities or responsibilities.

A practical approach to administrative spaces would be to specify three types of administrative areas: (1) superintendent and his assistants, the business office and school board; (2) school building principals and their related staffs; (3) other offices, such as plant services or warehouse.

I. Offices of School Superintendent, Assistants, Business Management, and the School Board.

These four groups of administration offices are functionally related. They require a common public reception room and information clerk who may also serve as one of the secretaries. The public reception room needs to be comfortable and dignified for persons who are waiting. Lavatories and drinking fountain should be accessible. There should be parking space and public entry. The ingress to offices should be simple and easily directed from the public reception room.

A. Space Requirements

(1) The school superintendent's office should accommodate five or six visitors. It should be large enough for executive-type desk, display table, file cabinets. Separate storage closet and lavatory. Wall treatment (to be specified). Carpeted.

(2) Since a large amount of planning (administrative, curriculum, cabinet meetings, advisory committees, etc.) goes on continually, the school superintendent's office should be connected with a planning room.

(3) This planning room should have a conference table to seat fifteen persons. It also should allow for a display table and storage cabinets as well as library book shelving. Carpeted.

(4) The school board room (which is not a good substitute for the planning room) should be specifically designed for the

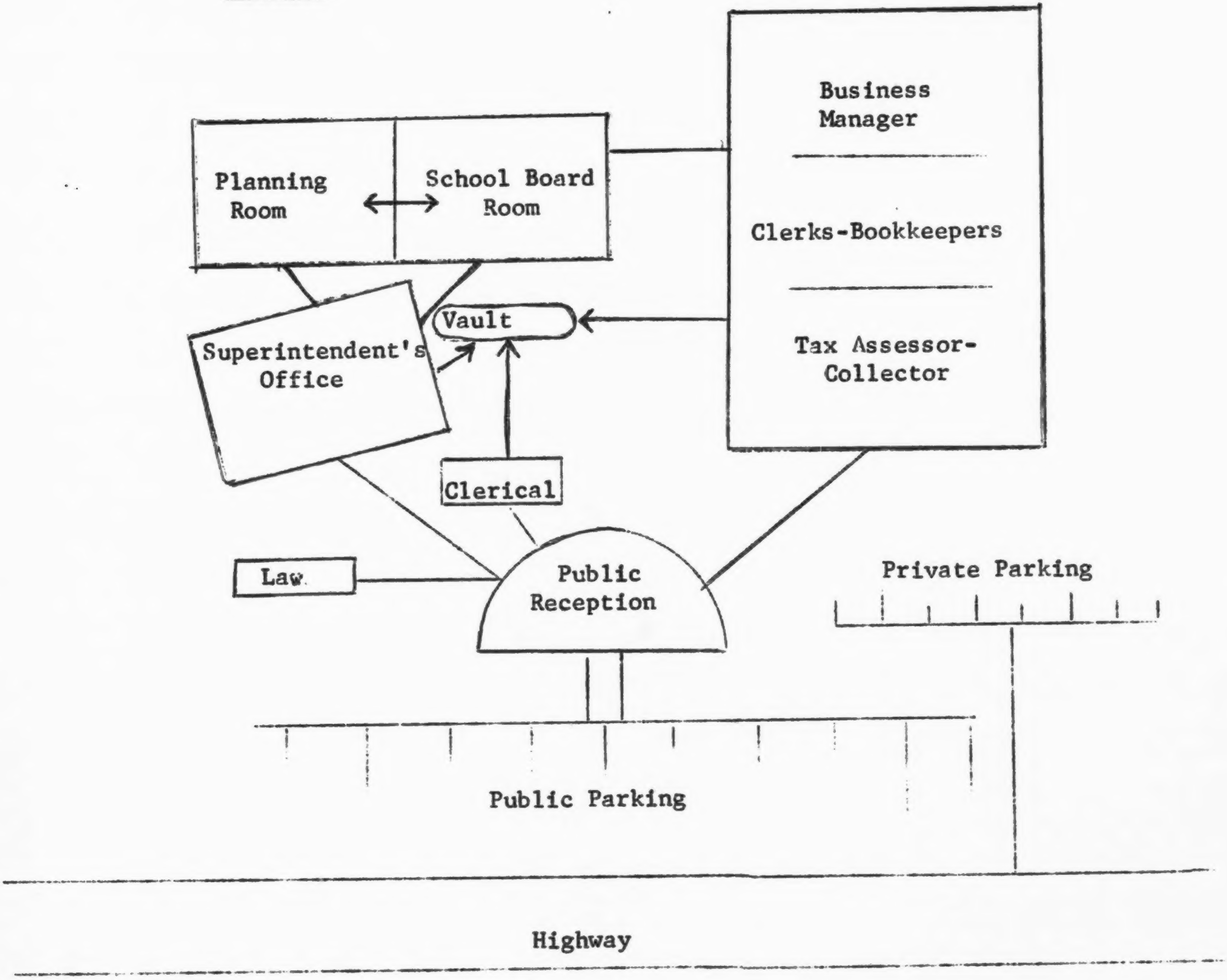
purpose (to be specified).

A folding partition at one end should give access to a space that could be converted easily to a public attendance or visitor's area for 30 persons. However, the school board room itself need accommodate a total of only 18 or 20 seats for normal operation.

(5) Additional offices for administrative assistants who will be added later should be planned for but not built at this time (for example, curriculum coordinator, director of special services, etc.).

(6) The business offices should comprise a separate unit located off the public reception room (to be specified). The business offices will include space for the tax assessor-collector and for the business manager.

B. General Area Relationships of the Central Administrative Offices


Business Manager
Clerks-Bookkeepers
Tax Assessor-Collector
Planning Room
School Board Room
Vault
Superintendent's Office
Clerical
Law
Public Reception
Private Parking
Public Parking
Highway

C. Traffic

(1) Parking for the public off the highway.

(2) Parking for employees.

(3) Internal traffic ought to allow easy access from business manager to school superintendent, etc.

(4) Public traffic through a main entrance.

D. Storage

(1) A fire-proof vault needs to be available for all financial, instructional, tax assessment, census, attendance, property, and other major district records.

(2) Supplies storage closets for each office.

(3) A stock room for the unit. (However, warehousing of major school equipment and supplies should be (a) in the school buildings, and (b) in the main school bus garage and warehousing unit - see below.)

E. Special Requirements and Furnishings

(1) Decor (to be specified).

(2) Bookkeeping machines.

(3) Duplicating equipment.

(4) Tables for utility work (to be specified).

(5) Extra folding chairs.

(6) Other standard executive type office furnishings (to be specified).

(7) School board room furnishings (to be specified).

(8) Zoned for summer air conditioning.

II. Offices of School Principals and Their Related Staffs

While there is something to be said for offices located in odd corners of the building and such corner offices are generally being utilized, the developing growing nature of school building administration points toward the wisdom of having expansible administrative units located at a central place in the building. A suite of offices would serve this purpose in a modern high school.

Office space is needed for the building principal, the clerks, the guidance counselors, the school nurse, etc. All of these offices may need to refer to the same central file of pupil records and data. They should look inward toward the student body; but also they are, on frequent occasions, visited by the public.

An open style of design is interesting, wherein the public and students may have comfortable seating in a pleasant foyer. A receptionist located by the foyer serves many duties: source of information, distribution of mail and bulletins, collector of data from students, principal's private secretary, controller of supplies, telephone control center, keeper of innumerable student records, account books, and files, and as general clerk, including duplicating. For all these duties, more than one desk may be required: e.g., a public desk and a private workroom, with glass partition, for more concentrated work. At some seasons, more than one clerk may be employed.

A. Space Requirements of the Secondary School Offices

(1) Space for the building principal may be a private office to accommodate ten or twelve visitors. The office should have decor, be carpeted, have a storage closet and lavatory, and space for a display table, desk, and filing cabinets.

(2) Good working conditions exist for the principal if he also has close at hand a conference room.

(3) The guidance counselor requires an office to accommodate six or eight persons, plus storage closet, and floor space for filing cabinets, bookcases, display cases of guidance materials, and a display table. The counselor's office should have access both to the above conference room, and

to the public reception area where students may wait.

(4) The health clinic is a designed, self-contained unit consisting of (a) small entry waiting room, (b) nurse's office, (c) separated rest room containing two cots and (d) lavatory. The nurse's office should be large enough for free-standing equipment and furnishings such as desk, chairs, file, first aid stand, audiometer, etc. Children will be examined, parents interviewed, ill children cared for temporarily, attendance problems and census problems investigated, first aid rendered, etc.; in other words, a considerable amount of internal traffic will occur. The health clinic should be well-ventilated and lighted throughout.

(5) Other offices will be required (to be specified).

(6) Modern schools no longer have "teachers' lounges." The concept of a lounging space shows poor management. Men faculty and women faculty should have lavatories. A small dressing room may be included as part of the plan.

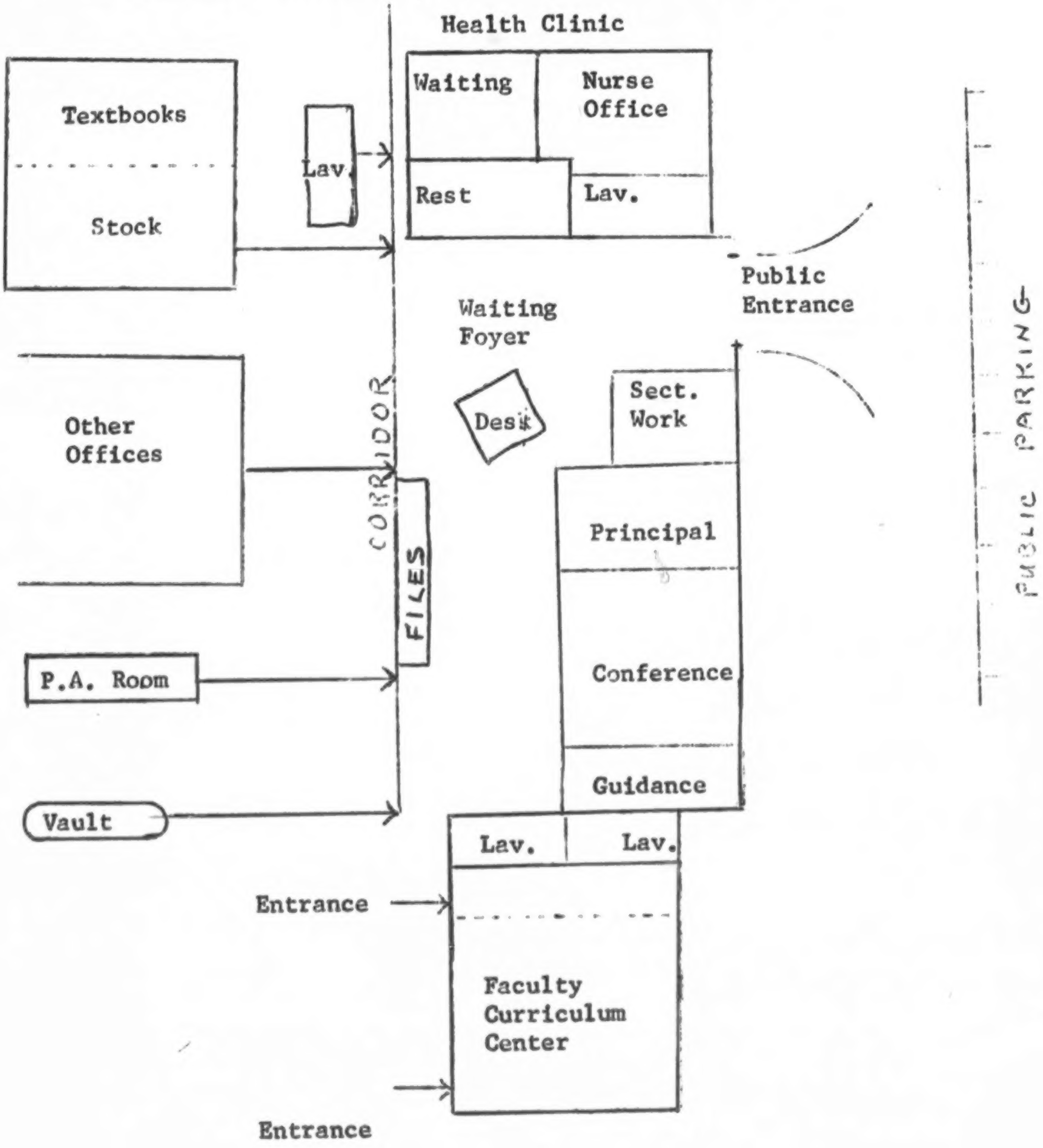
   (a) However, the real need is for a professional planning, resource, and curriculum center. This curriculum center may be made as comfortable as the outdated faculty lounge, having floor lamps, reading tables, upholstered furniture, etc.; but this is a matter of furnishings, not of function. The recommended area is one-classroom equivalent (which may include the above faculty lavatories and dressing room).

   (b) Special requirements of the curriculum center are a combination sink and work table, extensive library bookshelving, several display tables, and free-standing cabinet storage that may also be space dividers.

(c) The room is for professional conferences, curriculum revision projects, and lesson preparation. Space dividers should separate individual study desks from conference tables.

(d) The arrangement of the curriculum center should provide for utilities, lighting and air-conditioned ventilation suited to various organization of the work. Plans should include two entrances from corridor.

B. General Area Relationships of Secondary School Offices


Health Clinic
Waiting
Nurse Office
Rest
Lav.
Textbooks
Stock
Lav.
Public Entrance
Waiting Foyer
Desk
Sect. Work
Other Offices
CORRIDOR
FILES
Principal
Conference
Guidance
P.A. Room
Vault
Lav.
Lav.
Entrance
Faculty Curriculum Center
Entrance
PUBLIC PARKING

C. Traffic Related to Secondary School Offices

(1) Public parking near main entrance.

(2) Central records and files accessible to principal, guidance counselor, and clerks.

(3) Conference room accessible to principal and guidance counselor.

(4) Foyer-waiting room with benches and seats for 20 persons.

(5) Public entrance to foyer, not normally used by the students.

(6) Secretary controls traffic to offices, answers inquiries, and also has a small private office for clerical work.

(7) Secretary controls the public address (PA) control room.

(8) Major duplicating work may be located in the business department.

D. Storage

(1) Built-in storage closets for all offices.

(2) Vault for the high school records.

(3) Area for filing cabinets - general secondary school files.

(4) Space in curriculum center for storage cabinets and bookcases.

(5) Free textbook storage room (to be specified).

(6) Stock room (general warehousing of the high school supplies).

(7) Shelving and bins for stock room (to be specified).

(8) Good illumination.

E. Special Requirements and Furnishings

(1) Carpeted floors in the foyer, offices, curriculum center, and entire area.

(2) Ceramic tile floor in lavatories.

(3) Separate public address control room - soundproof with

glass front. (The system may handle public address, am-fm radio, tape recording and records, television channels, and bell system.)

(4) Electric outlets for business machines, typewriters, etc.

(5) Other standard executive type office furnishings (to be specified).

(6) Zoned for summer air conditioning.

III. Other Offices

(1) Building custodian's office, with supply room adjoining.

(2) Food service manager's office, near kitchen.

(3) Warehouse and maintenance department offices (see below).

SERVICE AREAS

Among the school services (non-instructional) are food services, library services, health, guidance, custodial, transportation, maintenance, grounds care, stadium, warehousing, parking, auditorium.

Space has been specified above for health clinic, guidance office, custodian's office and storage room, and business manager.

Services which have to be deferred because of lack of funds in the authorized bond issue are (1) stadium, (2) auditorium, (3) public parking, (4) bus garage. These have been omitted from the following recommendations.

The areas to be considered below are as follows: (1) cafeteria (food service), (2) library (and audio-visual materials center), and (3) maintenance and warehousing building.

I. Cafeteria

(1) The cafeteria should be planned initially for 200 students per serving. It may have to be expanded later 3x or 4x.

(2) The kitchen should follow state department specifications.

(3) The storage should follow state department specifications.

(4) Dishwashing area should be separate.

(5) Good service would allow multiple lines of students.

(6) Kitchen and food service should be separable from eating area and with soundproof, wide doorways, enabling other utilization of the cafeteria during the day.

A. Space Requirements of the Cafeteria

(1) The serving area for 200 students need not necessarily be rectangular, nor all on one level; in fact, it could even be open-style on the corridor. The architect should submit several trial drawings. The furniture will simply be table and chairs.

(2) One section of the serving area may orient toward a platform stage used by speech and drama department. This stage should have (a) curtains, (b) stage lighting, (c) property storage room, (d) dressing room for rear entrance. The stage may have three dimensional view (optional).

(3) The other parts of the cafeteria, provided sound proof partitions are installed, can be utilized as follows:

- (a) Chorus rehearsal (including piano).
- (b) Audio-visual showing.
- (c) Conference rooms.
- (d) Snack bar.
- (e) Student activity group meetings.
- (f) Study room.

(4) Obviously, to have the cafeteria at least 75 per cent

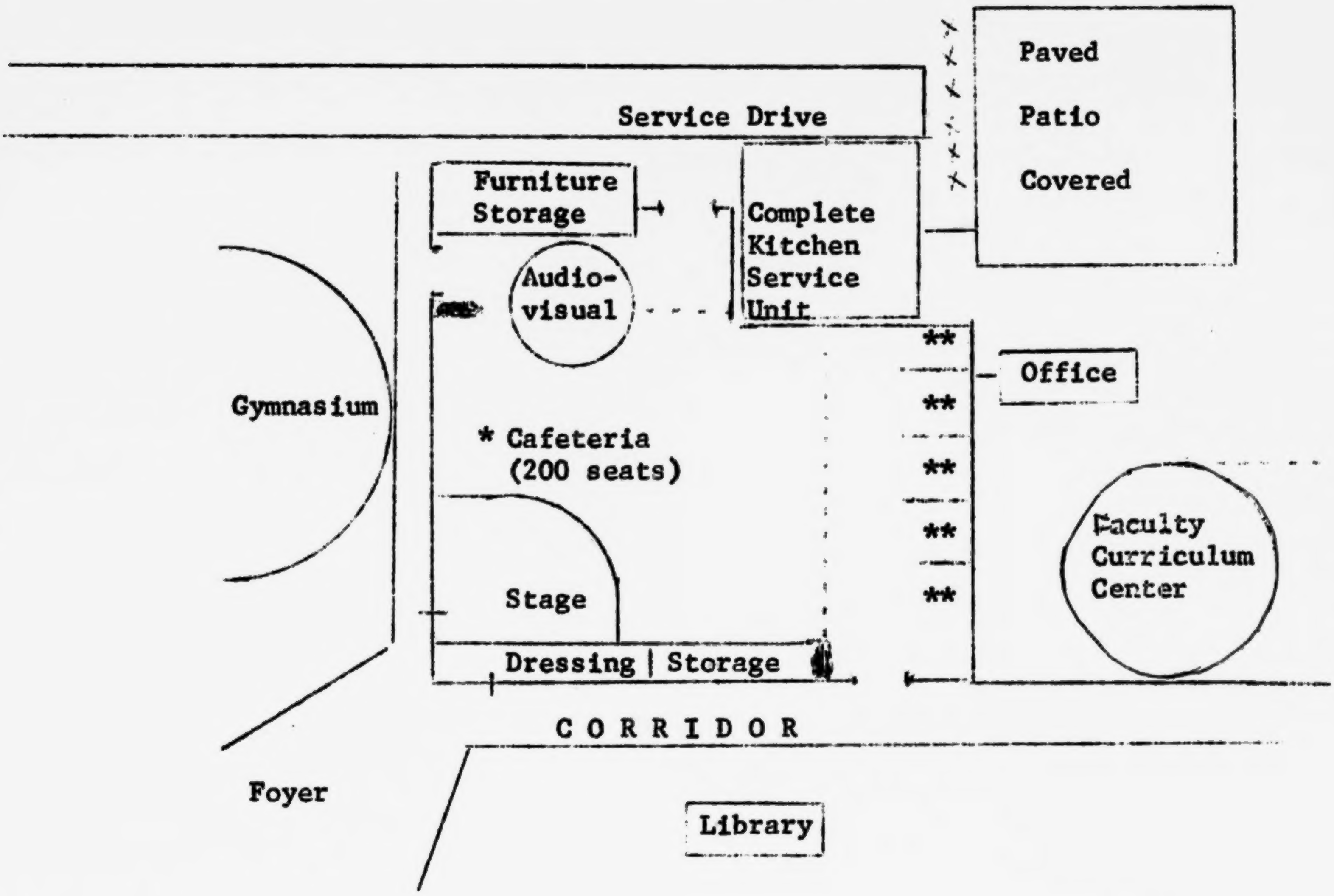
utilized will require installations and zoning (such as split level).

(5) Wall spaces should be arranged for exhibits, museum, trophy cases, and educational materials display.

(6) Corridor access should be continuous during the day.

(7) A store room is needed for cafeteria tables and chairs.

B. General Area Relationships of the Cafeteria



Paved
Patio
Covered
Service Drive
Furniture Storage
Complete Kitchen Service Unit
Audio-visual
Gymnasium
* Cafeteria (200 seats)
**
**
**
**
**
Office
Faculty Curriculum Center
Stage
Dressing
Storage
CORRIDOR
Foyer
Library

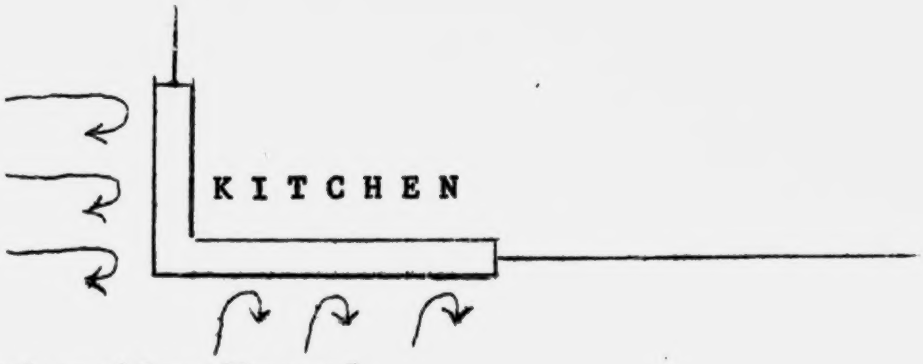
* May be a step-down level facing the stage.
** Conference tables to seat 6 or 8 persons.

C. Traffic

(1) Separate, direct, service driveway for food trucks.

(2) External patio with tables and benches for out-of-doors food service from kitchen.

(3) Kitchen food service of multiple lines without waiting in line:



(4) Separate dish washing disposal.

(5) Wide doorways at all points for equipment and heavy traffic.

(6) Extension of food service to corridors (optional).

(7) Storage room adjoining cafeteria for removal of tables on occasion.

(8) Possible provision for out-door theatricals on paved patio.

D. Storage

(1) Stage storage.

(2) Furniture storage.

(3) Food storage (to be specified).

(4) Supplies storage.

(5) Display cabinets built in wall for security.

E. Special Requirements and Furnishings

(1) Electric control panel and outlets for stage; all special lights plug in.

(2) Sound proof partitions.

(3) Kitchen entirely separable and having separate entrance,

when food service is completed.

(4) Frozen food lockers.

(5) Hot and cold food service.

(6) Cafeteria chairs (225) (to be specified).

(7) All kitchen equipment to serve 500 persons.

(8) Decor of a multi-purpose room.

II. Library

The library is a resource materials and reference center for the student body and faculty. It provides a station for one full time librarian and several student assistants. The reading tables area should accommodate a minimum of 80 students. Book shelving should be initially planned for 5,000 volumes. An open style shelving is preferred, with space dividers and removable glass partitions. The book reference areas should be zoned (to be specified).

The general control clerk's desk should be located near a wide doorway to the corridor. The library will probably be open both daytime and evenings; its control from the main public entrance must be well-lighted and strictly zoned for access during out-of-school hours.

Among the several work areas to be planned are (1) audio-visual and materials center, (2) conference room, (3) book storage and repair room, (4) office.

The library should symbolize academic learning. It should be separate, and should appear a showcase of the secondary school program to students and public alike. Expansibility in the future may be 2x or 3x.

A. Space Requirements of the Library

(1) Audio-visual and materials storage room.

(2) Audio-visual and materials construction, testing, and repairs workroom.

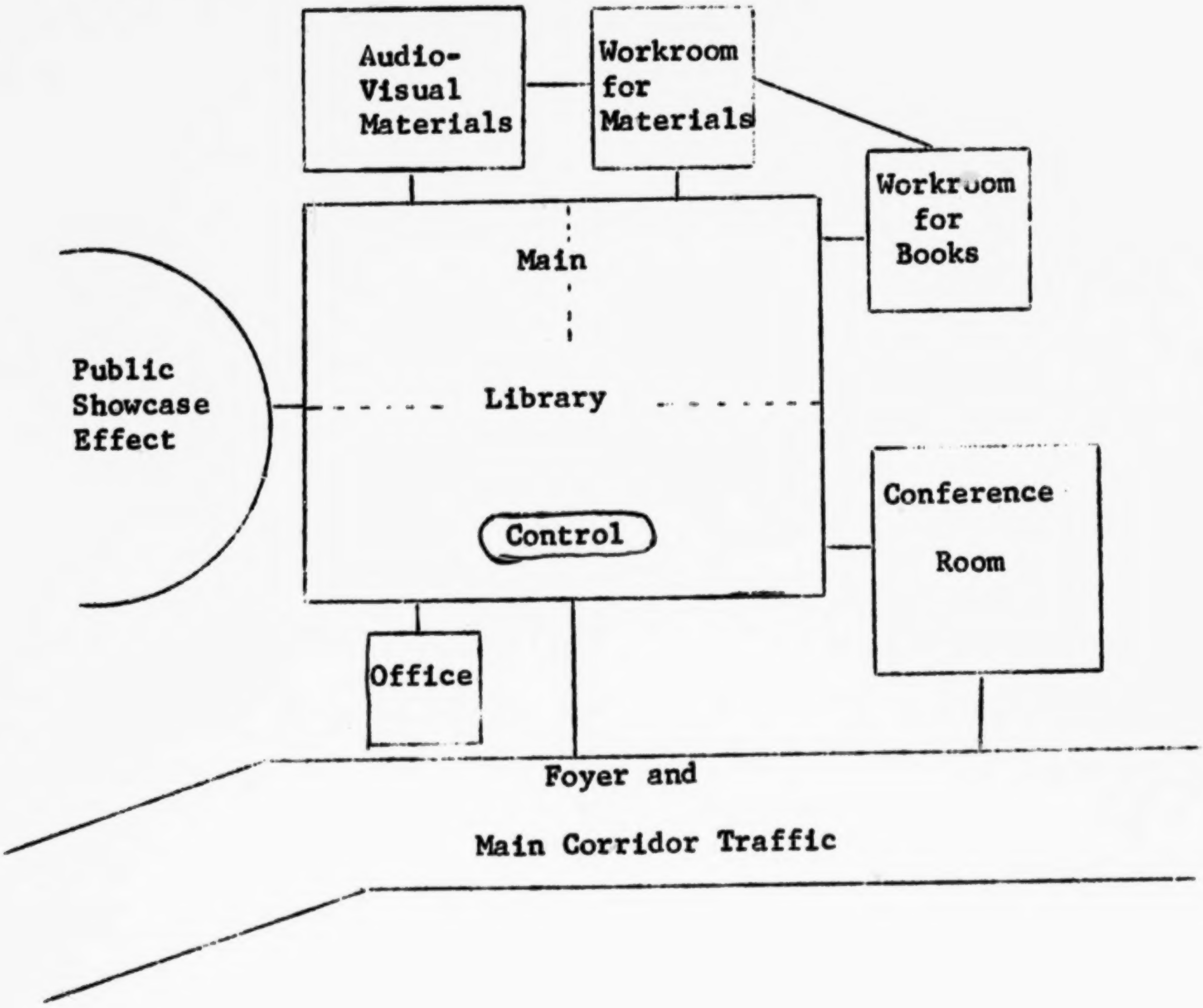
(3) Conference room for 20 persons.

(4) Main library: all shelves, cabinets, furnishings, to be free-standing with space allowed.

(5) Library book storage and repair room.

(6) Small private office for the librarian.

B. General Area Relationships of the Library


Audio-Visual Materials
Workroom for Materials
Workroom for Books
Main
Library
Public Showcase Effect
Control
Conference Room
Office
Foyer and
Main Corridor Traffic

C. Traffic

(1) Accessible from all parts of building.

(2) Near public entrance.

(3) First floor show-case effect.

(4) Internal traffic controlled by control desk.

(5) Conference room has separate corridor entrance.

(6) Over-all illumination and air-conditioned ventilation.

(7) Space dividers can be rearranged according to utilization of library.

(8) May be situated as a separate unit of the building complex.

D. Storage

(1) Audio-visual materials (to be specified).

(2) Books (to be specified).

(3) Maximum use of free-standing furnishings for flexibility, matched as to dimensions.

(4) May combine with movable space dividers.

E. Special Requirements and Furnishings

(1) Carpeted.

(2) Decor (to be planned).

(3) Library furniture (to be specified).

(4) Storage (to be specified).

(5) Conference table in conference room.

(6) Hot and cold water in the work room.

(7) Drinking fountains and lavatories accessible.

(8) Electric outlets for interior floor lights, displays, etc.

III. Maintenance and Warehousing Building

A low cost building should be constructed (if funds are available) for maintenance and warehousing, to perform the following functions:

(1) Bus repair dock.

(2) Grounds equipment storage.

(3) Grounds equipment repair (e.g., mowers, tractors, etc.).

(4) Spare parts stock room.

(5) Electrical repair room (for the many electrical equipment repairs).

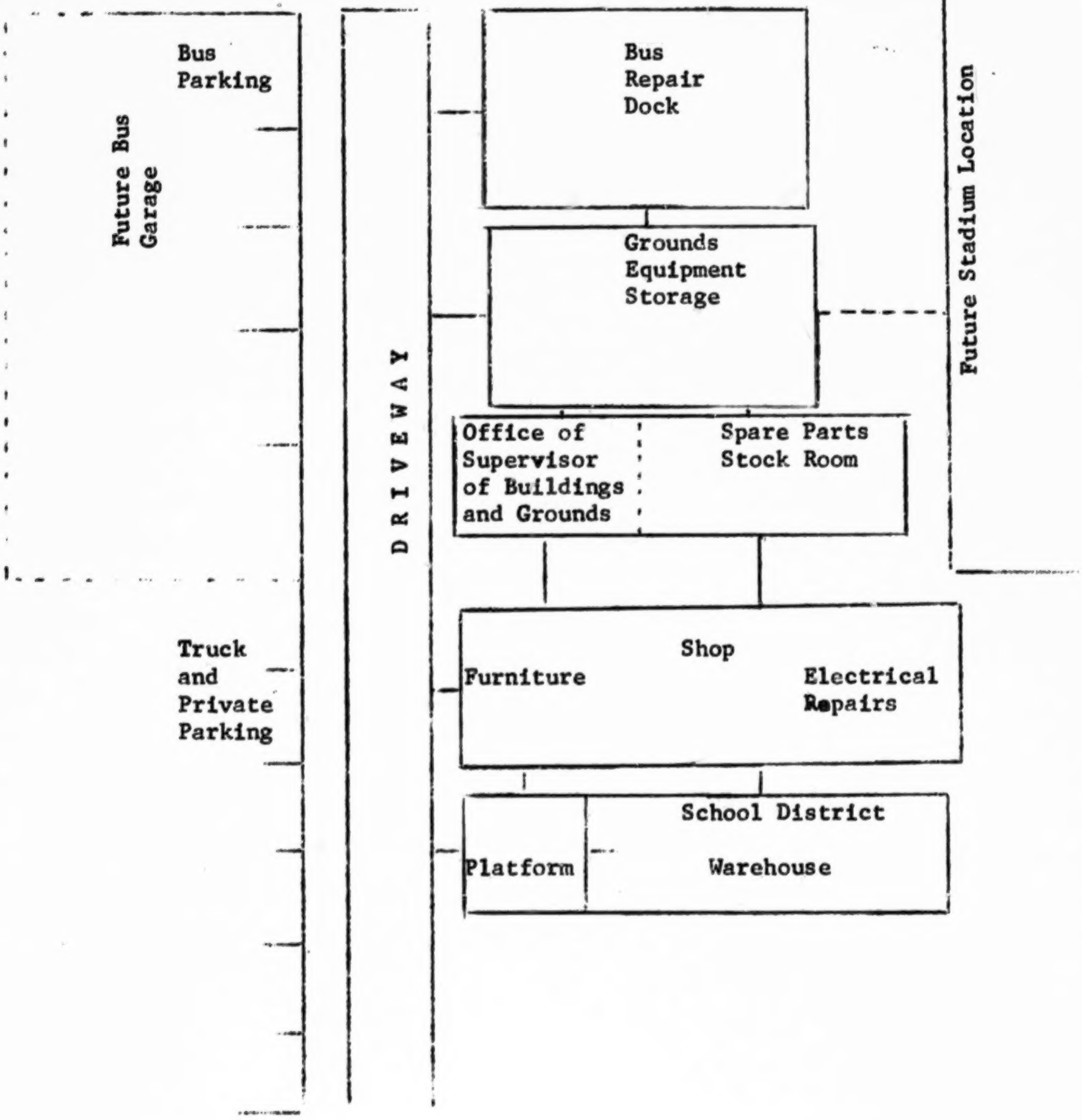
(6) Furniture storage and repair.

(7) Office for Supervisor of Buildings and Grounds.

(8) Warehousing stock room and loading platform for general school supplies and equipment.

(9) Expansible later into a school bus garage.

A. General Area Relationships of Maintenance and Warehousing Building


Bus Parking
Future Bus Garage
DRIVEWAY
Bus Repair Dock
Grounds Equipment Storage
Future Stadium Location
Office of Supervisor of Buildings and Grounds
Spare Parts Stock Room
Truck and Private Parking
Shop
Furniture
Electrical Repairs
Platform
School District Warehouse

B. Special Requirements

(1) Bus repair dock (to be specified).

(2) Electrical repair bench (to be specified).

(3) Furniture repair equipment (to be specified).

(4) Tools (to be specified).

(5) Loading trucks (to be specified).

(6) Spare parts stock room.

(7) Office of Supervisor of Buildings and Grounds.

(8) Office of Director of Transportation (optional).

SUMMARY

Above, in outline form, are the educational specifications for the New Caney Secondary School to be located on the central site. These educational specifications communicate the needs and performance goals to the architect. The educational specifications are intended to be used in a conference or series of conferences with the architect.

The educational specifications constitute a check-list for discussion. They should be discussed item by item from beginning to end. There is space allowed in the manuscript to write notes and to add additional items during the conferences.

The educational specifications are the property of the New Caney Board of Education. The architect is expected to develop a compact and economical plan that will incorporate these educational specifications. Later the educational specifications will be checked against the preliminary plans and outline specifications that he submits.

PART IV

GUIDELINES FOR PLANNING

Relocation of the secondary school on an adequate central school site has been a primary factor in the New Caney School building program. It was a major factor in the bond election proposal. The new secondary school plant will be built on a central site of approximately forty acres. Building funds presently authorized will provide about $430,000 for initial construction.

The building funds must include outlay for clearing and developing the central site. The construction budget should also allow for equipment and furnishings of the new secondary school and for the technical costs of the total project (refer to budget outline in Appendix Interim Report).

Since this is a new site development, certain features of the new construction such as cafeteria, driveways and approaches, utilities, and plant services will cost disproportionately higher than when later additions are erected. Therefore, every effort must be made to limit these initial costs and to conserve as much of the building fund as possible for construction of enclosed instructional spaces.

For example, it would be desirable to postpone athletic field development until a later bond election is indicated by the population increase, and to continue using the existing athletics field on the elementary site for current enrollments. Accordingly a stadium was not included in the preceding educational specifications (Part III).

The school architect should be instructed to design a plot plan for the central school site that will allow for future additions of four times the initial building capacity. Based upon experience, we can assume that a certain number of children will leave school before they graduate from high school making the holding power less than 100%. However, it is anticipated that every effort will be made to provide a continuous program of education from elementary grades through high school. Therefore it is assumed that the secondary school will seek to fulfill the needs of all students and the holding power of the high school will increase beyond present levels.

The new secondary school will probably not be occupied before 1964 or 1965. If construction proceeds slowly in 1964 it may be impractical to move into the new building before September, 1965. By that time a total school district enrollment of 1,153 to 1,343 pupils is predicted. (Refer to School Needs, the first report of the consultants, and Interim Report contained in the Appendix).

Of such total enrollment, the high school grades will have an enrollment of 400 pupils, or enough to open the proposed new high school on the central site. This enrollment will require[1] enclosed building space of more than 320,000 square feet to accommodate the initial attendance in the new high school plant. The educational specifications of Part III are based on this assumption.

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[1] W. H. Strevell and A. J. Burke, Administration of the School Building Program (McGraw-Hill Book Co., 1959), Page 153.

The survey team has called attention to the fact that a second elementary school will soon be required in the Porter area of the school district. Refer to enrollment projections in Part II. The accompanying map, Figure 8, demonstrates future attendance areas of the school district, referring to the Porter area as "alternate site."

The survey team does not recommend that any of the bond money be spent on renovation of the old elementary school building or its related buildings. Such renovations or modernization as are needed should be financed under "repairs and upkeep" in the annual maintenance tax for school operation. The present bond monies are so restricted that they should be committed wholely to new construction.

At the present stage of the work, the Board of Education has three acceptable alternatives:

I. Construct a second elementary school in the Porter area.

II. Build as much as funds permit of the new secondary school on the central site and move the secondary school into it now.

III. Construct practical and serviceable units of the future secondary school plant on the new central site; but plan to house therein temporarily the overflow of intermediate grade pupils, and in subsequent years to move the secondary grades to the new plant by units, first the junior high and later the senior high as the new school plant develops.

The survey staff considers Alternative III above to be the most economical, efficient, and forward looking procedure. It was the next step recommended in their Interim Report (Appendix). Subsequent review by the survey team has shown that it offers maximum advantages.

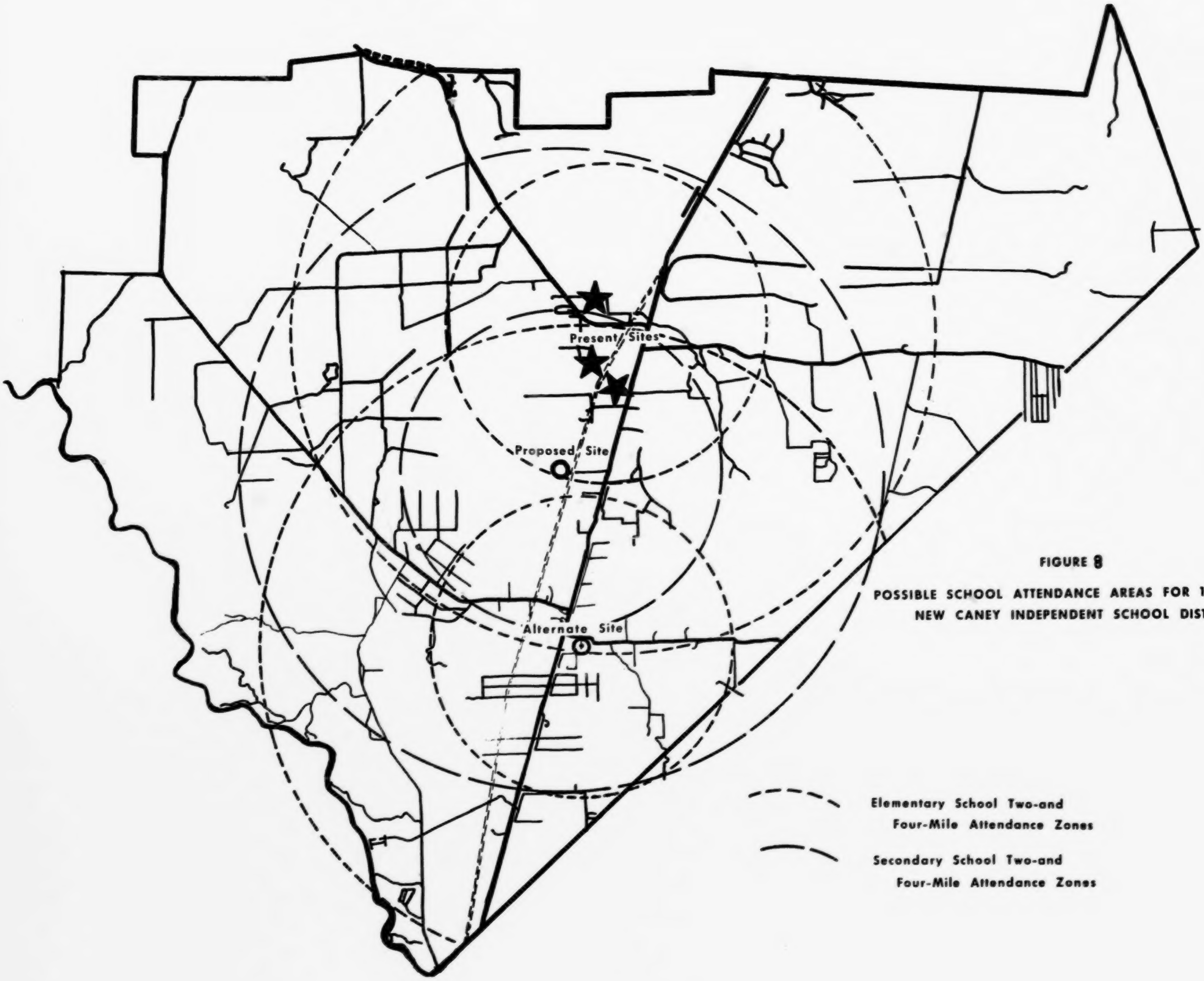


FIGURE 8

POSSIBLE SCHOOL ATTENDANCE AREAS FOR 1967-1968
NEW CANEY INDEPENDENT SCHOOL DISTRICT

Present Sites
Proposed Site
Alternate Site
Elementary School Two-and Four-Mile Attendance Zones
Secondary School Two-and Four-Mile Attendance Zones

Recommendations

Following are recommended steps in the New Caney construction program:

(1) Spend no further bond monies on any of the existing buildings or on the old site at this time.

(2) Continue to accommodate the senior high school for about three years in the present high school building.

(3) Instruct the school architect to prepare a plot plan of the new central site for a major secondary school plant. (This will constitute the master plan.)

(4) Prepare an itemized budget for the balance of bond monies in the construction account. Refer to the budget form proposed in Interim Report Page 4.)

(5) Discuss with the school architect item by item the above educational specifications (Part III) to be sure he understands the long range plan of the school district.

(6) Proceed at the earliest practical date with construction of secondary school plant units on the new central site.

(7) Arrange to move the intermediate grades into this new plant temporarily as soon as possible, and plan to phase it over by stages into a major secondary school beginning with junior high levels.

(8) Initiate a series of staff studies with the faculty to develop educational programs by departments. The curriculum should be upgraded to accompany the new building.

(9) Evaluate the financial structure of the New Caney school district.

Future bond monies will be required as population increases and property values appreciate. The school building program of the New Caney

School District should invite new residential population and not lag behind its increasing teaching load.

APPENDIX

New Caney Independent School District

Interim Report

(1) Introduction

The first report was titled "School Needs." It proposed as follows

Step I. Construct a six-classroom wing as an addition to the 1959 high school building. Budgeted $45,000. Contract for construction of seven-room and lavatory addition has been let @ $60,191 plus architect's fees.

Step II. Acquire a forty-acre school site centrally located in the district. Of this, 20 acres have been acquired and surveyed. An adjoining 20 acres is being negotiated. Budgeted $25,000.

Step III. Construct an eight-room section of future high school plant on the central site. For this $80,000 was budgeted. However, the balance in the building fund may not provide this much for construction at this time. Step III is the subject of this Interim Report.

Step IV. Re-evaluate taxable property in the district. Before the balance of the authorized $500,000 school bonds can be issued, the re-evaluation must be completed to increase the legal debt limit. Mr. P. L. Marquess of Wharton has been engaged to direct the re-evaluation. Public hearings are scheduled for October, 1963 on the tax roll. This step should make available approximately $430,000 for the central high school plant. However, this sum should be carefully budgeted to include (a) clearing the site, (b) utilities, (c) building construction, (d) landscaping, and (e) furnishings and equipment. A budget on this is supplied below.

Step V. Work will need to be started as soon as possible on provision of plant capacity required for the 1966-67 enrollments.

(2) Description of the Central Site

The site chosen for the campus plot for the New Caney Independent School District is near the geographic center of the district. It will be along the west access road to the proposed extension of the Eastex Freeway (Highway 59) and will have 500 feet of frontage on this modern network of superhighways so that it will be easily accessible from all of the network of roads in the area. The site contains 40.0 acres and is located in the Massey Survey (A-386) and was previously owned by the W. D. Cleveland Estate and the Texas Company.

The acreage selected is heavily wooded with pine and other trees and offers satisfying artistic possibilities. It should be well-drained because of the meanderings of White Oak Creek across the southwestern corner of the property and a natural drainage from north to south on the tract by a shallow ditch. While these features must be considered in the planning and utilization of the plot, the study team feels that these features will enhance the value of the area because of its adequate drainage and the possibility of utilization of its natural beauty. In the development and construction phase of the building program, care should be taken that a sufficient number of trees and shrubs are left standing to provide the shade and beauty which now make the site so desirable.

From the standpoint of accessibility, size, beauty, drainage, and general desirability the central site has been well-chosen and should serve the school district well for its purposes.

(3) Flexibility in Planning the Central Site

One purpose of the 40-acre central site is to protect future investment in new building by allowing for flexibility and expansion. Enrollments have not been projected beyond 1966-67 (estimated 1,563 ADA) but the land usage and population studies have shown that the 40-acre central site will be completely utilized in a few years.

Therefore, the building designs and the plot lay-out should contemplate both multi-usage and expansion considerably beyond the initial $430,000 investment.

Whatever building units are erected with funds available should be capable of utilization in a school plant of three or four times larger capacity than the initial project. This does not require over-sized facilities necessarily. But it does require that the initial facilities logically relate to the expanded plant.

(4) General Work to Make the Site Available

Access: Some immediate work must be done to make the central site accessible and usable at the present time. An access road must be opened into the area because it is presently available only on foot. This road may be constructed most economically at the present into the northern end of the plot and will offer the best possibilities for development from that approach because of the creek and other problems should access be attempted from the south.

Clearing: Clearing of timbers on the site preparatory to building is both desirable and necessary. Selective clearing should be done to preserve the trees which are the best formed and free from disease or malformations. The architect should be requested to provide a total site plan.

Roads: Road building should begin as soon as possible so that a projected beginning date for the buildings will not be delayed. On completion of the access road, the roads for ingress and egress from the site should be developed with parking, delivery, and maintenance drives being considered.

Utilities: Immediate contact should be made with the utility companies to open the area to their services. Advantage should be taken of any planning services or assistance which is available through these companies as well as public agencies such as the County Engineer's office, the Soil Conservation Services, and others.

Drainage: Immediate steps should be taken to insure the best advantage is taken of the natural drainage available on the plot. The natural drainage ditch should be cleared and straightened where necessary to provide maximum volume of drain-off to be utilized. Possibly the future highway project will take care of some of the drainage requirements.

(5) Development of Central Site

The question on this date is whether to begin immediately the proposed 8-room unit on the central site or hold off a few months (approximately January 1, 1964) until the balance of the bond issue can be sold and approximately $430,000 be available for development of the central site.

The existing buildings actually accommodate -- although in a very substandard and overcrowded way -- 850 ADA The enrollment estimate for 1963-64 is 990 ADA The new 7-room addition on the existing 1959 high school building will increase capacity on that site about 200 pupils next fall. This should at least enable the school administration to operate for one more year under present conditions, although substandard and overcrowded.

From the standpoint of economy and long-range effective utilization, the new 7-room addition on the 1959 high school building is the maximum classroom capacity that should be built on the present site, unless major outlay is made for the expansion of related facilities on the site. Eventually this building will be the New Caney Junior High School. The existing science rooms, home economics, library, shop, gymnasium, dressing rooms, lavatories, and administrative areas will in general fit into this utilization in a balanced way if the number of classrooms is proportionate. But the addition of these new classrooms reaches the peak capacity for the related facilities as they stand.

The community expects the major new school plant to be on the central site and to set a new educational standard for the district. The central High School requires careful planning. The ideal approach would be to have a complete plot plan developed by the school architect before work is started. This would mean waiting until the balance of the bonds are issued in January, 1964 and a total project budget prepared. However, it would be an economy in the long run since the square footage on the proposed separate 8-room unit would run higher than if designed and built in the main plant.

(6) Budget of Construction Fund

Following is the project budget outline which the consultants recommend:

ADMINISTRATIVE COSTS - PROFESSIONAL SERVICES

1. Architect's services and blueprints (bldg.). $________
2. Engineer's services and blueprints (bldg.) ________
3. Clerk-of-works (bldg.) ________
4. Legal services ________
5. Board expenses - advertising, elections ________
6. Insurance (if extra) ________
7. Other ________

Total Administrative costs $________

CONTRACT AND NONCONTRACT COSTS OF SCHOOL-PLANT CONSTRUCTION

8. Foundation contract (if separate contract) $________
9. General-construction contract ________
10. Heating and ventilation contract ________
11. Plumbing contract ________
12. Electrical contract ________
13. Sewage-disposal-system contract ________
14. Other ________

Total of major contracts $________

15. Noncontract construction $________
16. Service connection ________
17. Temporary heat during construction ________
18. Other building equipment ________

Total of noncontract costs $________

Building project costs $________

FURNITURE AND EQUIPMENT COSTS OF NEW PLANT

19. Instructional equipment and furniture $________
20. Noninstructional equipment and furniture (office-janitor) ________
21. Architect's services (if extra for this) ________
22. Board expenses for equipment ________

Total of new furniture and equipment costs $________

SITE AND SITE DEVELOPMENT COSTS

23. Purchase of site	$
24. Legal services (title search, etc.)	
25. Architect's services (site plans)	
26. Survey and engineer's services	
27. Demolition of buildings	
28. Rough grading	
29. Finish grading and planting	
30. Landscaping	
31. Walks, roads, and parking areas	
32. Fences, retaining walls, bridges, flag pole	
33. New water supply system	
34. Ornamental lights and flood lights	
35. Athletic field, play areas, drainage	
36. Playground and recreational equipment	
Total of site and development costs	$
Total of school-plant costs	$

DEBT-SERVICE COSTS

37. Interest during construction	$
38. Bond retirement	
Total of Debt-Service Costs	$
Total capital-improvement-fund expenditures	$

(7) Tentative Proposal for 8-Room Unit

The school board has requested educational specifications data for Step III, a proposed beginning 8-room unit on the central site. The following tentative proposal shows one of several possible ways that aunit could be built now with good probability that it would integrate with an eventual plot plan.

The proposal is based on the assumption that (1) general-purpose classrooms would be the logical solution, (2) these classrooms could later be converted to such usage as administration, English, social studies, shop, or special education, (3) their temporary use, however, until the new high school is built, would be to relieve overcrowding in the present intermediate grade building, (4) the unit would have to be multi-oriented since its relationships to the plot plan cannot be decided in advance of the total site plan, (5) the unit must have a public entrance, (6) it should be compact, air-conditioned design.

(8) Standards for the Proposed Unit

(1) 900 sq. ft. over-all per classroom
(2) air conditioned (adequate with low noise level and controls)
(3) high level of illumination; 3 wall outlets per room
(4) over-size storage, built-in in irregular corners for all rooms
(5) wall space conserved for teaching - display, chalkboard, book cases, etc.
(6) two exits per classroom
(7) sound proof partitions as indicated
(8) minimum 9 ft. width corridors
(9) NCSC standards for lavatories, water facilities, drinking fountains and electrical installations
(10) direct safety exit from all rooms on a corridor
(11) fire and panic safety
(12) acoustical treatment and/or design

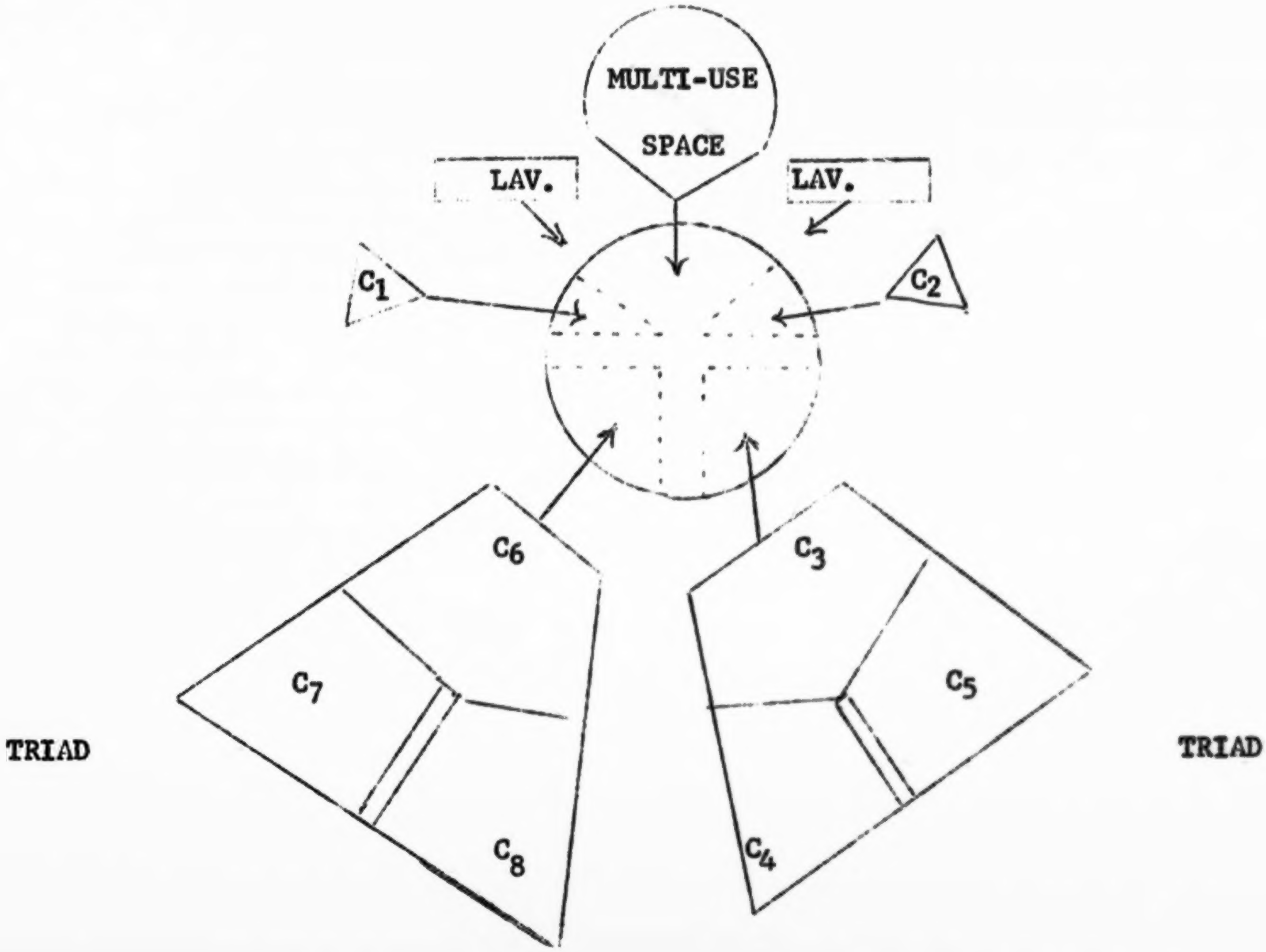
(9) Facilities and Furnishings for Proposed Unit

(1) small platform in C_3 and C_6 (see diagram below)
(2) book cases (_______feet) in multi-purpose room
(3) 9 teacher's desks; 27 chairs
(4) 220 pupil desks and 220 pupil chairs - stacking
(5) 60 trapezoidal desks and 60 pupil chairs matching
(6) all rooms to feature chalk-boards at correct height, cork boards or equivalent for display, bookcases, (note: the storage spaces should have built-in shelving)
(7) although hot and cold water is not specified for classrooms at present - it should be accessible from mechanical core at future time to any area
(8) carpeted on slab floor; except tile corridors
(9) lavatories: ceramic tile floor, tile walls
(10) movable partitions in triade as indicated
(11) exterior lights - entrance and night lights
(12) paved walks

(Above are outline specifications; detailed preliminary plans will be submitted by architect.)

(10) Proposed Schematic

Following is a schematic of spaces proposed:



Features of the above space arrangement are (1) total of 8 standard classrooms and a multi-purpose area, (2) two triads of classrooms designed for future team teaching, (3) both internal and external circulation, (4) compact for efficient air-conditioning, (5) flexible for various future applications - a minimum of weight-bearing partitions, (6) several exits for multiple orientation.

Future utilization of this unit may be: (1) If located in an accessible place with good public entrance and front parking, this could be the eventual administration building of the district -- as much space as needed could be used, particularly the multi-use space and C_1 and C_2; (2) The triad arrangement would allow social studies and English departments to organize team teaching -- the partition arrangement allows grouping by 90-60-30 pupil stations whenever desired; (3) The minimum of weight bearing partitions would enable any desired special usage of these classrooms in the future.

(11) Occupation of Proposed Unit Pending Completion of Total Project

The proposed eight-room unit has been conceived with alternative uses in mind. It is suggested that the building be used initially as an intermediate unit with immediate supervision being given to the unit by a supervising teacher rather than creating an administrative post. The unavailability of gymnasium facilities for competitive athletics would seem to make a 4th, 5th, 6th grade grouping or a 5th, 6th, and 7th grade grouping most feasible initially. The unit should be utilized for eight classroom teacher units, and a 240 pupil station load would be desirable. The multi-use space could be utilized temporarily for temporary library or eating space as well as a teacher work area or for other school or public gatherings where not more than 80 to 100 persons would be present.

(12) Transportation

Opening the intermediate unit will require the planning of transportation routes. The buses which serve the southern area of the district will add approximately one mile to the length of their run both morning and evening by including a stop at the new site.

(13) Cafeteria Equipment

The cafeteria is a problem because of the inadequacy of the food preparation, storage, and cooking areas. The consultants are not prepared to recommend moving the cafeteria or constructing a new kitchen at this time. It would seem more prudent to recommend the upgrading of the currently used facilities by the purchase of modern kitchen and serving equipment and the rearrangement of the present food preparation and storage areas to permit present facilities to be used for at least another year. The central campus development, when the entire bond issue is sold, should provide cafeteria facilities for that site. Long-range plans for the present site should include plans for rehabilitation of the elementary school building at which time permanent cafeteria facilities can be considered. The consultant team would recommend that basic food preparation and service facilities should be improved to service an additional 150 pupils and that this new equipment be purchased if possible from the operating budget of the cafeteria.

(14) General Objectives of the New Caney School Building Program

The children of the New Caney Independent School District deserve the highest quality educational program that the community can provide to equip them to compete in the educational, social, and economic life of the metropolitan area. Each step taken by the school district has this general objective in perspective as a part of its consideration.

The following purposes guide the educational decision-making in New Caney:

1. The first step is to provide immediate housing of pupil stations while contributing to an overall, long range solution of the housing needs.

2. The district seeks an instructional unit which will be sufficiently flexible to allow alternative use at present alleviating the severe classroom shortage and also provide an academic unit for the long range plan.

3. The central site will allow for a school facility about which the community may unite and build a highly desirable residential living design.

4. The school plant should be constructed as economically as possible but incorporate features of flexibility and modern design.